

36"

28"

8"

Scale:
1" = 8"



City of Indianapolis
Department of Public Works

Another

Clean Stream Project



Raw sewage spilling into our streams is a serious problem. The City of Indianapolis' **Clean Stream Team** is working to upgrade our out-of-date sewer system to **reduce these overflows**. More than 50 projects like this one are already underway to keep raw sewage out of our waterways and improve the quality of life in our neighborhoods.

East Bank Storage Tank

This project creates an underground storage tank to capture sewage overflows. During rainfall events, the tank will hold up to three million gallons of untreated sewage and stormwater that would otherwise flow into White River. When waters recede in the sewer system, the wastewater will be directed to the city's treatment plants.

Benefits:

- Improved White River water quality
- Fewer raw sewage overflows
- Healthier and safer waters flowing through downtown

Design firm: Dinebue & Associates
Supervising Engineer: Malcolm Pirnie
Contractor: Thiersman Construction
Budget: \$5.8 million
Completion by: Fall 2004

800 For more information contact: (317) 488-6100 or visit our website at www.indy.gov/cleanstream. Refer to project number 15-10-001.
In the event of an emergency call: 317-440-0000 (Hazardous Construction)

Raw sewage spilling into our streams is a serious problem. The City of Indianapolis' **Clean Stream Team** is working to upgrade our out-of-date sewer system to **reduce these overflows**. Many projects are underway or in planning to keep raw sewage out of our waterways and improve the quality of life in our neighborhoods.

Pogues Run Sewage Overflow Reduction

This project represents Phase II of the city's Pogues Run Initiative, a three-phase program to improve water quality in this neighborhood stream. This project will reduce sewage overflows from four locations near several Indianapolis Public Schools, including Arsenal Tech High School, Harshman Middle School, Horizon Alternative Middle School and School 74. Overflows will be reduced from their current average of 22-38 in a typical year to 4 overflows per year or less. The overflows will be redirected to an underground tunnel where people won't come in contact with the water. Once completed, this project will greatly improve Pogues Run water quality and help protect children from sewage overflows.

Benefits:

- Reduces the frequency and volume of raw sewage overflows to Pogues Run
- Improves water quality near neighborhoods and schools
- Pedestrian bridge and channel improvements to Pogues Run

Design firm: Clark Dietz, Inc.
Contractor: Walsh Construction Company
Super Excavators, Inc.
Insituform Technologies, USA, Inc.
Inspection Firm: Christopher B. Burke Engineering, Ltd.
Budget: \$19.2 million
Completion by: August 2006



For more information, contact: 327-4MAC (4622) or visit our Web site at www.indycleanstreams.org.

In the event of an emergency, call 327-4622. Refer to Project CS-31-002.

Clean Stream Program

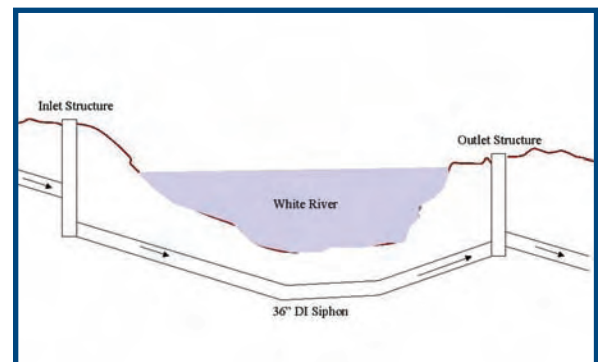
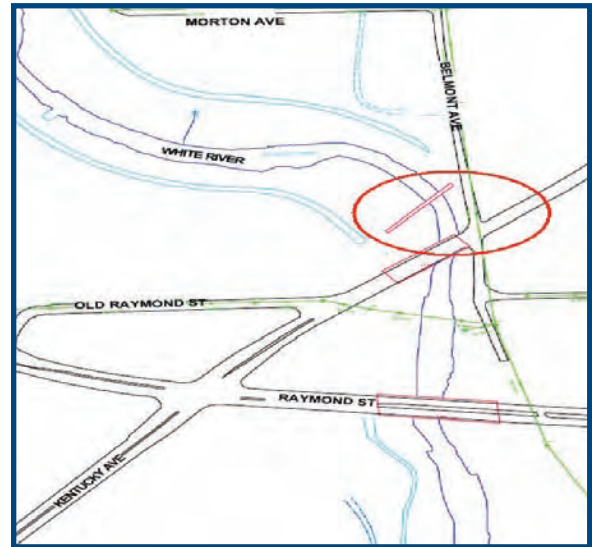


Additional Barrel for Harding/White River Siphon

The City of Indianapolis Department of Public Works is working to reduce overflows to the White River and other area waterways.

This project involved construction of an additional 36-inch inverted siphon barrel under White River to increase the carrying capacity of the existing combined sewer main artery, called an “interceptor.” A siphon is a U-shaped, underground pipe that can transport wastewater under the river on its path to the treatment plants. The siphon uses atmospheric pressure to push wastewater against the forces of gravity, moving it under the river and back up to a higher level.

This project helps to eliminate the bottleneck in the interceptor and reduce overflows near Harding Street and Waterway Boulevard.



PROJECT BENEFITS:

- Eliminate bottlenecks in a main sewer artery and reduce raw sewage overflows to the White River near Harding Street and Waterway Boulevard.

For more information visit our Web site at www.indycleanstreams.org

Project Cost:	\$1.35 million
Design Engineer:	United Consulting Engineers, Inc.
Contractor:	Eagle Valley, Inc.
Inspection Firm:	United Consulting Engineers, Inc.
Completion Date:	December 2003
Status:	In Service

Clean Stream Program



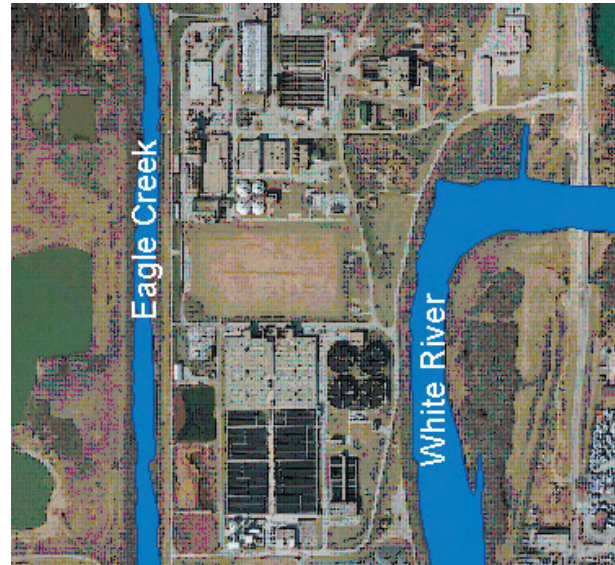
Belmont Wet Weather Chlorination/ Dechlorination Facilities

The City of Indianapolis Department of Public Works is working to reduce millions of gallons of sewage overflows at the Belmont Advanced Wastewater Treatment Plant. Overflows at the plant cause 2.2 billion gallons of partially treated wastewater to enter the White River each year.

This project will ensure that wet-weather flows at the Belmont AWT plant are disinfected prior to discharge to the White River. This will ensure that the plant meets permit limits set by the state and federal governments.

The project includes rehabilitating an existing abandoned chlorine contact tank and installing new chlorination and dechlorination chemical feed equipment.

This is a companion project to the trickling filter/solids contact project at Belmont, which will provide secondary treatment to wet-weather flows at the plant.



ANTICIPATED PROJECT BENEFITS:

- Increase wet weather treatment flow capability at the Belmont Advanced Wastewater Treatment Plant.
- Improve stream water quality and protect public health.
- Reduce bacteria and pathogen levels in the White River after storm events.

For more information visit our Web site at www.indycleanstreams.org

Project Cost: \$18.3 million

Completion Date: March 2010

Status: In Planning

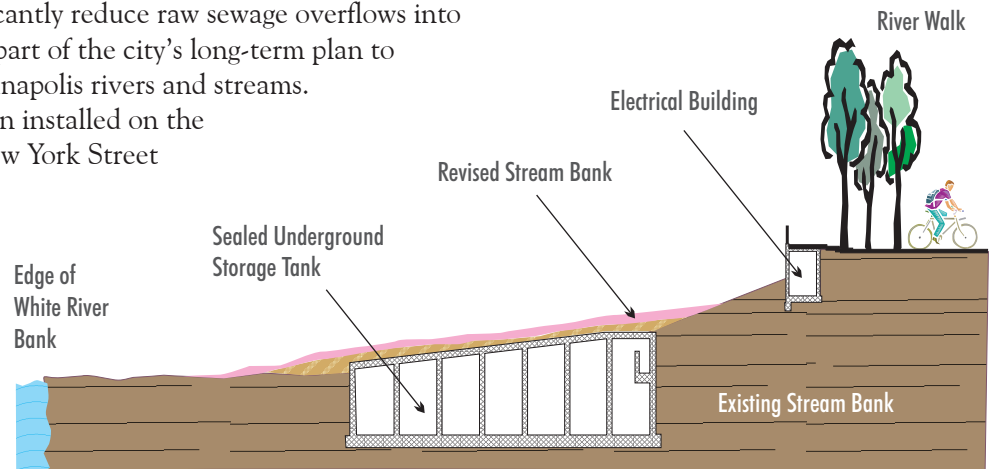


White River

East Bank Storage Tank

The City of Indianapolis Department of Public Works has constructed a 3-million-gallon underground storage tank that will significantly reduce raw sewage overflows into the White River downtown. The tank is part of the city's long-term plan to reduce sewage overflows and restore Indianapolis rivers and streams.

The concrete storage structure has been installed on the east bank of the river, just south of the New York Street bridge and west of the Indiana University-Purdue University at Indianapolis campus. The tank captures and stores a combination of raw sewage and stormwater that would otherwise overflow into the river during rainfall or snowmelt. It holds the wastewater until flows in the sewer system subside, providing enough capacity to transport the flows to the Belmont Advanced Wastewater Treatment Plant for treatment. The underground tank blends into the stream bank and is not noticeable to people enjoying White River State Park.



Conceptual Illustration - Not to Scale

For more information visit our Web site at www.indycleanstreams.org



The tank controls one of the largest sources of raw sewage overflow in the city. Between July and December 2001, overflows occurred 29 times at this location. With the storage tank in place, five overflows would have occurred.

Project Budget:	\$5.89 million, including planning, design, construction, and inspection.
Design Firm:	Donohue & Associates, Inc.
Inspection Firm:	Malcolm-Pirnie, Inc.
Contractor:	Thieneman Construction, Inc.
Completion Date:	Fall 2004
Project Benefits:	<ul style="list-style-type: none"> • Improved White River water quality • Fewer raw sewage overflows • Healthier and safer waters flowing through downtown • Removal of unhealthy and unsightly debris
Special Features:	Flushing gates that clean out the storage tank after each use. This flushed water will then be sent for treatment at the wastewater treatment plant.

Clean Stream Program



Elimination of Overflow 275 on Lower White River

The City of Indianapolis Department of Public Works is working to reduce millions of gallons of sewage overflows to White River, Fall Creek and other neighborhood streams.

The White River runs through the center of Indianapolis and is an important community asset, with many city parks located along its banks.

This project is intended to separate all of the combined sewers and eliminate combined sewer overflow number 275 at White River near Thompson Road. This outfall point is isolated from other sewer overflow locations, making it an ideal candidate for sewer separation. Separate sewers exist throughout most of the area with combined sewers scattered within six small portions of the system. Detaching the storm collection pipes, which feed into the sanitary sewer and installing new pipes to transport stormwater runoff into existing storm conveyance facilities will eliminate the combined sewers. This will eliminate outfall point 275.

Many other projects planned, begun or already completed will improve water quality throughout the White River watershed.



For more information visit our Web site at www.indycleanstreams.org

Design Engineer:	Hanson Engineers
Project Cost:	\$1.4 million
Expected Completion Date:	May 2007
Status:	In Design

ANTICIPATED PROJECT BENEFITS:

- Eliminate one of the city's overflow points
- Reduce clean water infiltration and inflow to sewer system.
- Improve stream water quality.
- Improve stream bank aesthetics by removing an outfall structure.



Fall Creek Inflatable Dams to Reduce Sewer Overflows

The City of Indianapolis Department of Public Works is working to keep millions of gallons of raw sewage out of Fall Creek and other area waterways.

Inflatable rubber dams have been placed within the sewer system at three locations near 32nd and 34th streets to prevent thousands of gallons of raw sewage and polluted stormwater from spilling into Fall Creek with each rainfall. Together, these inflatable dams are preventing 30 million gallons of raw sewage overflows into Fall Creek every year.

When stormwater enters the sewers, the dam inflates to block the overflow pipe and direct the wastewater to the city's treatment plants. After the storm, when the flows in the sewer system recede, the dam deflates. Inflatable dams help save money by using existing sewer lines to contain and reduce raw sewage overflows.

Electronic sensors upstream and downstream of the dam send data to a centralized computer, which activate the dam as needed.

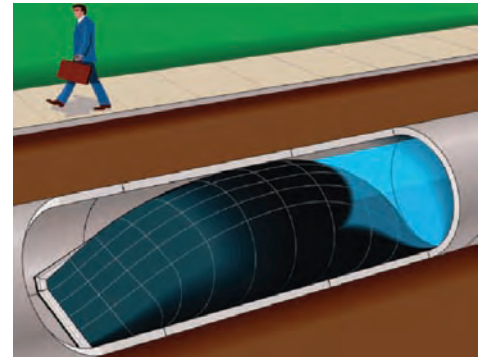


The red dots show where inflatable dams have been inserted to reduce sewer overflows into Fall Creek.

PROJECT BENEFITS:

- Reduce overflows to Fall Creek at 32nd and 34th street
- Improve stream water quality
- Reduce solids and floatables in the Fall Creek Basin
- Reduce odor

For more information visit our Web site at www.indycleanstreams.org



Project Cost:	\$3.3 million
Design Engineer:	Howard Needles Tammen & Bergendorff
Contractor:	Bowen Engineering
Inspection Firm:	American Consulting Engineers, Inc.
Completion Date:	November 2003
Status:	In Service

Clean Stream Program



Treatment Plant Improvements Reduce Bypasses During Wet Weather Events

The City of Indianapolis Department of Public Works has completed a \$28 million project that will prevent millions of gallons of raw sewage from flowing into White River and Little Buck Creek.

Improvements at the Belmont and Southport Advanced Wastewater Treatment Plants included construction of flow equalization basins and a new raw sewage pumping station. The basins and the pumping station will reduce the frequency and volume of raw sewage overflows into the White River and Little Buck Creek by temporarily storing the flows during wet weather until the plants have the capacity to treat the flows.

The \$15.3 million wet-weather upgrades at the Belmont AWT plant include two earthen-walled, double-lined flow equalization basins and two combination concrete storage tanks / primary clarifiers. Combined, these facilities will store up to 38 million gallons of wastewater.

The \$12.8 million Southport upgrade aims to reduce combined sewage overflows to Little Buck Creek and the White River. The wet weather improvements at the Southport AWT plant include a new 75 million gallon/day raw sewage pump station, new 48-inch force mains to convey flows, and an earthen-walled double-lined equalization basin for storage and later treatment. The Southport basin has the capacity to store up to 25 million gallons of wastewater.

On average, Indianapolis has 45 to 80 storms causing raw sewage overflows per year. The project was completed on budget and months ahead of schedule.

This project is part of the city's long-term control plan to combat the century-old problem of raw sewage overflows into our local waterways.



Belmont flow equalization basin

ANTICIPATED PROJECT BENEFITS:

- Reduce frequency and volume of raw sewage overflows into White River and Little Buck Creek.

For more information visit our Web site at www.indycleanstreams.org

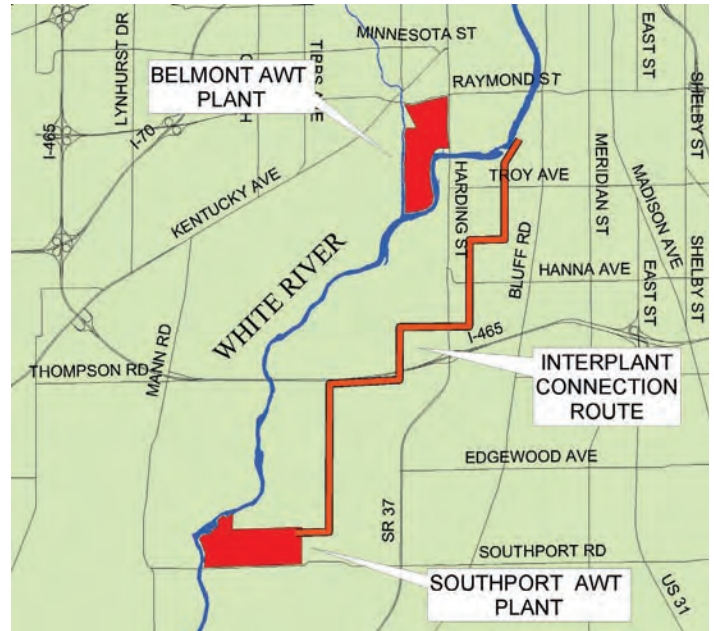
Design Engineer:	HNTB Corporation
Contractor:	Bowen Engineering
Inspection Firm:	Greeley and Hansen
Project Cost:	\$28 million
Completion Date:	August 2005



Interplant Connection Facility Plan

The City of Indianapolis Department of Public Works is working to reduce raw sewage overflows to the White River, Fall Creek and other neighborhood streams. This project evaluated alternatives for construction of a new sewer between the Belmont and Southport advanced wastewater treatment (AWT) plants. This plan also investigated approaches to convey all or part of the captured combined sewage to the Southport AWT facility for treatment. The facility planning also developed and evaluated various concepts for expanding the Southport facility to provide effective treatment of the captured combined sewage. Expansion alternatives for the Belmont AWT facility were evaluated previously during the preparation of the 2001 long-term control plan and subsequent pilot studies at the facility.

The interplant connection consists of a 144-inch diameter interceptor sewer that would originate just west of the Southern Avenue and Bluff Road intersection (near CSO 117) and terminate near the headworks of the Southport plant. Initially, the interceptor would store and convey overflows captured from CSO 117. After the deep tunnel is constructed, the new interceptor would convey overflows captured in the tunnel. The project will improve the city's ability to transport sewage to the Southport AWT plant at higher levels of flow.



For more information visit our Web site at www.indycleanstreams.org

ANTICIPATED PROJECT BENEFITS:

- Increase capability to treat collected sewage by sending flows to the Southport AWT plant when capacity is available.
- Reduce bypass flows at Belmont AWT facility.
- Optimize treatment plant capacities.
- Reduce raw sewage overflow volumes and occurrences.
- Improve water quality and protect public health.

Project Cost:	\$440,000 (Facility Plan)
Design Engineer:	MWH America, Inc. (Indianapolis Clean Stream Team)
Completion Date:	April 2004 (Study)
Status:	Study Completed



Pogues Run Sewage Overflow Reduction

The Indianapolis Department of Public Works will reduce sewage overflows near four local schools through a sewer and tunneling project under construction on the city's eastside.

Pogues Run was selected for the city's first tunneling project because of its proximity to Arsenal Tech High School, Harshman Middle School, Horizon Alternative Middle School and Theodore Potter Elementary School.

Focusing on the lower portion of Pogues Run between 10th and New York streets, the project will rehabilitate old brick sewers, dig a new tunnel to capture sewer overflows and redirect those overflows into an existing downtown tunnel—away from the schools. See map and detailed project description on back.

Overflows in the area should be reduced from an average of 22-38 storms in a typical year to four overflows or less, based on average rainfall statistics. Fewer overflows will occur in dry years; wet years may cause more than four.

All three phases of the project are scheduled to be complete by August 2006.

For more information visit our Web site at www.indycleanstreams.org



Walsh Construction crew members pour concrete to create a wastewater collection structure under East Michigan Street near Pogues Run, as part of Phase 1. Eventually, three sewer pipes will converge into the underground box, which will direct overflows into an underground tunnel and away from area schools and neighborhoods.



Super Excavators will use tunnel boring equipment like this to dig the tunnel for Phase 2.

Project Budget: \$19.2 million

Design Firm: Clark Dietz, Inc. and Brierly Associates

Inspection Firm: Christopher B. Burke Engineering Ltd.

Contractors: Walsh Construction Company, Super Excavators Inc., and Insituform Technologies, USA, Inc.

Expected Completion Date: August 2006

Project Benefits:

- Reduces the frequency and volume of raw sewage overflows to Pogues Run
- Improves water quality near neighborhoods and schools
- Pedestrian bridge and channel improvements to Pogues Run

Special Features: A new tunnel will capture the overflows and relocate them into a downtown tunnel, away from schools

Pogues Run Sewage Overflow Reduction (continued)

The Pogues Run project will be completed in three phases

PHASE 1

The project started in early 2005 when workers began digging under Michigan Street near the Interstate 65-North ramp to build a sewage collection box and a connecting sewer from Michigan Street up to 10th Street to capture sewer overflows.

PHASE 2

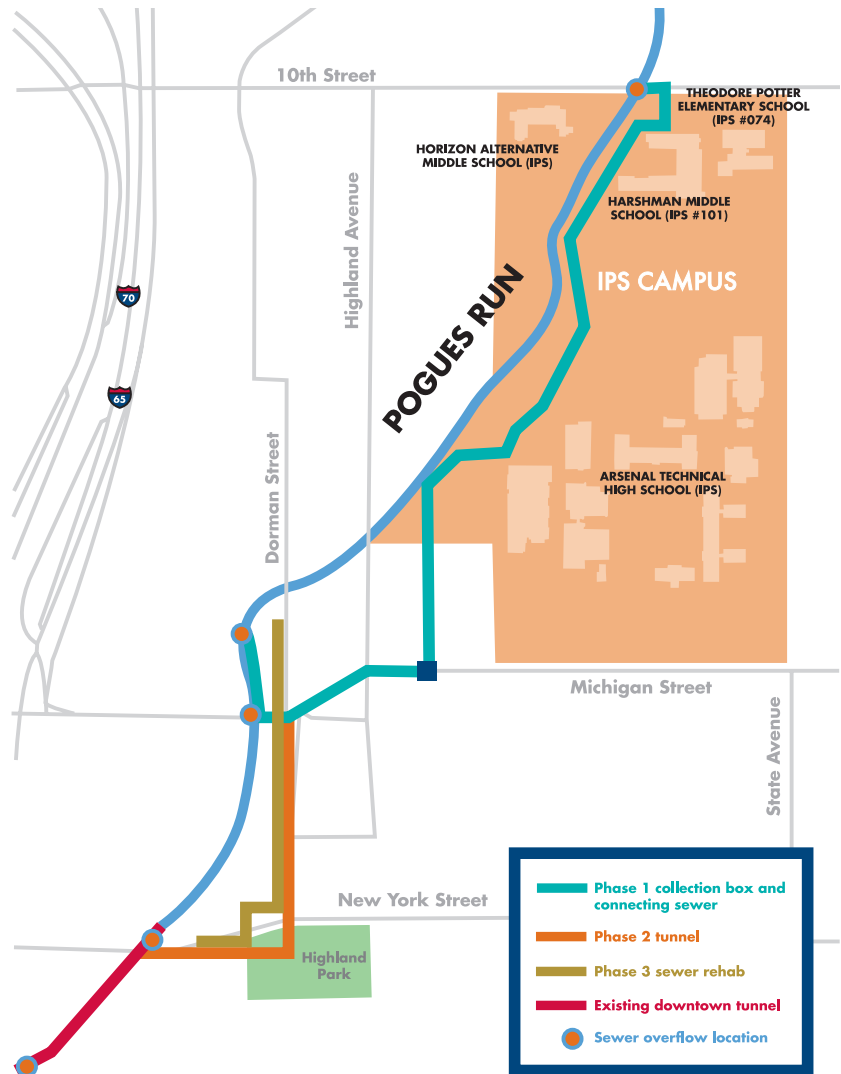
The second phase, initiated in March 2005, involves digging a tunnel connecting the new Michigan Street collection structure to the existing downtown tunnel. State-of-the-art tunneling equipment will be launched from Highland Park, located at New York and Dorman streets.

PHASE 3

Phase three will include rehabilitation of brick sewers along Dorman and New York streets. All three phases are scheduled to be complete in 2006. Another key part of this \$19.2 million construction project includes the replacement of the old Dorman Street pedestrian bridge and the widening of Pogues Run. These changes will bring the Cottage Home neighborhood out of the 100-year flood zone and allow residents to discontinue their flood insurance.

FUTURE

This project reduces overflows in the lower reach of Pogues Run. Additional improvements will be made later to reduce overflows in the upper portions of Pogues Run under the city's long-term control plan.



This 3-phase project will capture sewer overflows and relocate them to an underground tunnel and away from area schools.

Clean Stream Program



Odor Control

The odor control device near 34th & Sutherland helps control smells that occasionally surface as wastewater moves through the neighborhood to the Belmont Advanced Wastewater Treatment Plant on the southside. The Indianapolis Department of Public Works has made a substantial investment in the facility to ensure that odors are less frequent and not offensive to the surrounding neighborhood.

The odor control device works in tandem with a concrete junction chamber that sits beside it. The junction chamber receives wastewater from northeastside neighborhoods through a large pipeline, known as a force main. Odors can escape when sewage drops from the force main into the Fall Creek interceptor sewer, which carries wastewater to the treatment plant.

Instead of escaping into the neighborhood, air from the force main is now forced into the odor control device. The air then moves through a filtering process that involves wood chips soaked in ferrous chloride. The filters are designed to remove a variety of odors associated with sewage and wastewater, allowing cleaner air to be diffused back into the environment.

The city takes numerous other steps to ensure the odor control device works effectively. Each day, the city adds water and chemical solutions upstream of the site to help increase flows and eliminate odors. Monitoring equipment on the odor control device itself tracks the proper operation of the facility.

Both the odor control device and the junction chamber sit next to a newly opened portion of the Monon Trail that attracts a number of outdoor enthusiasts, including runners, walkers and bicyclists.



The odor control device (above) helps remove a variety of odors associated with wastewater and sewage. It sits next to a junction chamber that receives wastewater from northeastside neighborhoods.

For more information visit our Web site at www.indycleanstreams.org

Project Cost:	\$135,000, including landscaping
Design Firms:	Donohue & Associates, Inc. Shrewsbury & Associates, LLC
Completion Date:	2003
Contractor:	Bowen Engineering Corp.
Inspection Firm:	American Consulting, Inc.
Project Benefits:	Improved air quality for neighborhood residents
Special Features:	The odor control device utilizes a chemical filtering system that removes a number of odors associated with sewage and wastewater.

Clean Stream Program



Ozonation at Belmont to Benefit White River

Aquatic life should soon benefit from higher oxygen levels in the White River downstream of the city's advanced wastewater treatment plants, as the city returns to high purity oxygen treatment and ozonation for disinfection.

Following filtration, ozone will again be passed through the treated effluent as the final step before discharge. City engineers working to restore ozonation say ozone is superior at removing viruses and is effective against waterborne disease organisms harmful to humans. As a benefit, ozone's chief by-product is oxygen, which, when added to the river, benefits aquatic life.

"Ozone provides several advantages" said Jim Parks, a senior project engineer with the city's Department of Public Works. "Of disinfectants we could use, we believe this is best overall for the river."

Indianapolis was the first large U.S. city to ozonate wastewater in the 1980s. Ozonation was effective, but due to costs and maintenance issues, it was abandoned after 1994. Disinfection switched to chlorine bleach. Parks noted ozonation is commonly used for drinking water. Technology improvements make ozonation more reliable and cost effective with less maintenance.

ANTICIPATED PROJECT BENEFITS:

- Increase the wet weather flow capacity at the Belmont treatment plant.
- Upgrade of ozonation treatment flow rate for dry weather flows.
- Increase oxygen production capability.
- Improve pollutant removal efficiency in the wastewater treatment facility.
- Improve plant effluent quality
- Improve stream water quality and protect the public health.



For more information visit our Web site at www.indycleanstreams.org

Contractor:	Ozonia North America (Equipment)
Project Cost:	\$515,000 (Design) \$22.5 million (Construction)
Completion Date:	May 2004 (Design)
Status:	Ready for Contract Award

Clean Stream Program



Pilot Study for Wet Weather Flows at Belmont Treatment Plant

The City of Indianapolis Department of Public Works is working to reduce millions of gallons of sewage overflows at the Belmont Advanced Wastewater Treatment Plant. Overflows at the Belmont plant cause 2.2 billion gallons of partially treated wastewater to enter the White River each year.

The city conducted extensive pilot testing at the Belmont AWT plant in 2003 to evaluate several chemical clarification methods for removing suspended solids from the effluent of the existing trickling filter bio-roughing system (BRS). The goal of the bio-roughing solids clarification concept was to provide the equivalent of secondary biological treatment of wet-weather primary effluent bypasses using the existing bio-roughing system for soluble biological oxygen demand removal and new clarification equipment for suspended solids removal.

The results from the pilot program showed that chemically assisted clarification technologies were able to consistently achieve effluent total suspended solids concentrations below 45 mg/L when applied to the trickling filter bio-roughing effluent. However, chemical requirements and associated sludge generation rates were relatively high. Conventional clarification of the BRS effluent without some form of chemical or biological coagulation of the suspended solids was shown to be unreliable.

BOD₅ removal estimates based on piloted TSS removals suggested that traditional monthly secondary standards for BOD₅ (i.e., 30 mg/L monthly average limits) could not reliably be achieved by chemically assisted clarification methods. This is because chemically assisted clarification has essentially no effect on reducing the relatively high Belmont soluble BOD concentration. Therefore, the city concluded that the wet-weather treatment process at the Belmont plant must be more aggressive in terms of removing soluble BOD₅.

Accordingly, the study concluded that the preferred wet-weather treatment option would involve a trickling filter/solids contact (TF/SC) process. The TF/SC process would require new solids clarifiers following the bio-roughing towers, supplemented with biological contact and reaeration tanks. In other words, the existing bio-roughing process would be upgraded to a TF/SC process, a well-established and highly economical secondary treatment method.



ANTICIPATED PROJECT BENEFITS:

- Increase wet weather treatment capacity.
- Meet instream water quality requirements at lower costs to ratepayers.
- Reduce raw sewage overflow volume and frequency of overflows.
- Reduce Belmont Treatment Plant overflows and bypasses.
- Evaluate the effectiveness of new technologies before funds are spent on construction.

For more information visit our Web site at www.indycleanstreams.org

Design Engineer:	Shrewsbury & Associates
Project Cost:	\$807,000 (Study)
Completion Date:	May 2004
Status:	Waiting for permit approval from state and federal authorities to begin construction.

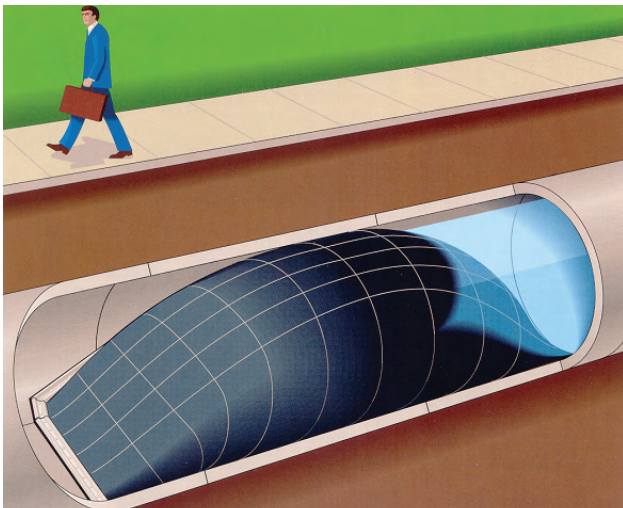


Pleasant Run Inflatable Dam (Ellenberger Park)

The City of Indianapolis Department of Public Works has completed a project that keeps millions of gallons of raw sewage out of Pleasant Run near Pleasant Run Parkway, East Drive at Michigan Street.

The inflatable rubber dam placed within the sewer system prevents up to 350,000 gallons of raw sewage and polluted stormwater from spilling into Pleasant Run with each rainfall. Currently about 28 million gallons overflow each year from this location.

When stormwater enters the sewers, the dam inflates to block the overflow pipe and direct the



wastewater to the city's treatment plants. After the storm, when the flows in the sewer system recede, the dam deflates. Inflatable dams like this one help save money by using existing sewer lines to contain and reduce raw sewage overflows. Electronic sensors upstream and downstream of the dam send data to a centralized computer, which activates the dam as needed.

This project also helps to reduce the amount of raw sewage flowing through Ellenberger Park after a rainfall. It is part of a \$5.6 million effort to install automated sewage control technologies in locations throughout the city. More work will be required in the future to further reduce overflows along Pleasant Run.

For more information visit our Web site at www.indycleanstreams.org

Design Engineer: Triad Engineering, Inc.

Contractor: Bowen Engineering Corp.

Inspection Firm: M.D. Wessler & Associates, Inc.

Project Cost: \$711,000

Completion Date: September 2003

Project Benefits:

- Prevents up to 350,000 gallons of raw sewage with each rainfall.
- Improves the water quality in Pleasant Run.

Special Features: Electronic sensors upstream and downstream of the dam send data to a centralized computer, and activates the dam as needed.



Pleasant Run Inflatable Dam (Howe Middle School)

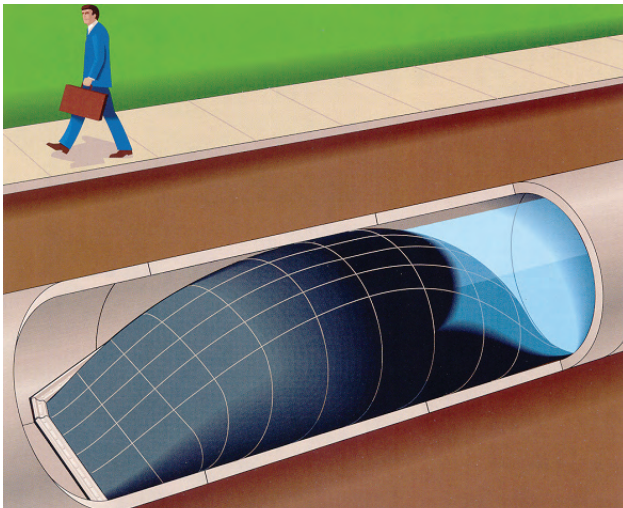
The City of Indianapolis Department of Public Works has completed a project to keep millions of gallons of raw sewage out of Pleasant Run near Howe Middle School.

An inflatable rubber dam within the sewer system to prevent up to 30,000 gallons of raw sewage and polluted stormwater from spilling into Pleasant Run with each rainfall. Currently about 15 million gallons overflow each year from this location.

When stormwater enters the sewers, the dam inflates to block the overflow pipe and direct the wastewater

to the city's treatment plants. After the storm, when the flows in the sewer system recede, the dam deflates. Inflatable dams like this one help save money by using existing sewer lines to contain and reduce raw sewage overflows. Electronic sensors upstream and downstream of the dam will send data to a centralized computer, which will activate the dam as needed.

This project also helps to reduce raw sewage flowing through Christian Park and Garfield Park after a rainfall. It is part of a \$5.6 million effort to install automated sewage control technologies in locations throughout the city.



Design Engineer: Triad Engineering, Inc.

Contractor: Bowen Engineering Corp.

Inspection Firm: M.D. Wessler & Associates, Inc.

Project Cost: \$649,900

Completion Date: September 2003

Project Benefits:

- Prevents up to 30,000 gallons of raw sewage with each rainfall.
- Improves the water quality in Pleasant Run.

Special Features: Electronic sensors upstream and downstream of the dam will send data to a centralized computer, which will activate the dam as needed.

For more information visit our Web site at www.indycleanstreams.org

Clean Stream Program

Pogues Run I-70/Emerson Avenue Wetlands

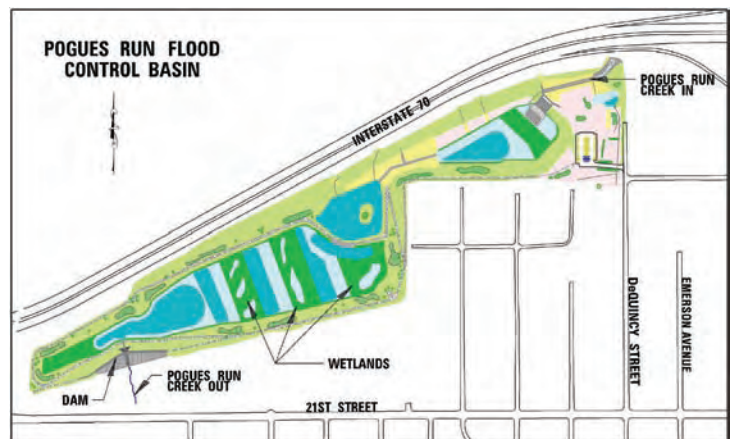
The City of Indianapolis Department of Public Works is working to reduce neighborhood flooding along Pogues Run and other area waterways. This project's primary purpose was to reduce historic flooding in many neighborhoods along Pogues Run. Combined with other projects, it also gives the city more options for reducing sewer overflows elsewhere on Pogues Run.

The project involved construction of open detention ponds, wetlands, and energy dissipation along Pogues Run upstream of the combined sewer area. The wetlands store stormwater that would otherwise flood many neighborhoods downstream during a heavy rain. The wetlands are located just south of Interstate 70 near the Emerson Avenue exit on the city's Eastside.

PROJECT BENEFITS:

- The completed project has significantly reduced long-term historical flooding in the urban Pogues run watershed by detaining stormwater and discharging to Pogues Run after the storm has subsided.
- The wetland facility is reducing stormwater pollution in the watershed.
- The reduction of stormwater discharged to Pogues Run allows the city to convert one of the barrels in the downstream Pogues Run tunnel into a storage facility for sewer overflows, thus reducing raw sewage overflows in lower Pogues Run.

For more information visit our Web site at www.indycleanstreams.org



Design Engineer:	Christopher B. Burke Engineering, Ltd.
Contractor:	Gradex, Inc.
Inspection Firm:	Christopher B. Burke Engineering, Ltd. VS Engineering, Inc.
Project Cost:	\$17.3 million
Completion Date:	January 2003
Status:	In-Service

Clean Stream Program



Primary Clarifiers at Belmont Advanced Wastewater Treatment Plant

The City of Indianapolis Department of Public Works is working to reduce millions of gallons of sewage overflows at the Belmont Advanced Wastewater Treatment Plant. Overflows at the plant cause 2.2 billion gallons of untreated wastewater to enter the White River each year.

This project converted existing pre-aeration tanks at the plant to primary clarifiers. This project provides increased primary treatment capacity by 30 million gallons per day and helps alleviate wet-weather overflows to the White River.



ANTICIPATED PROJECT BENEFITS:

- Provide 30 MGD additional primary treatment capacity at the Belmont AWT Plant.
- Reduce Belmont AWT Plant overflows and bypasses.
- Improve stream water quality and protect public health by reduction of overflow volumes.

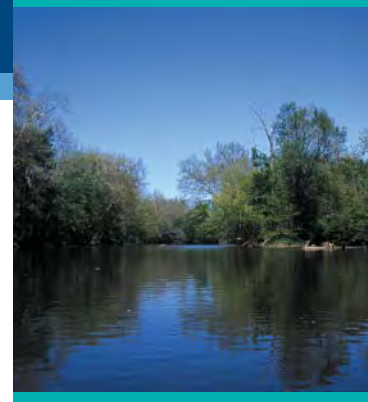
For more information visit our Web site at www.indycleanstreams.org

Design Engineer:	Howard Needles Tammen & Bergendorff
Contractor:	Bowen Engineering
Inspector Firm:	Howard Needles Tammen & Bergendorff
Project Cost:	\$3.49 million
Completion Date:	March 1999
Status:	In Service

Clean Stream Program



Beautiful, clean streams and rivers add to the quality of life in our city. The White River and neighborhood streams are resources that residents and visitors enjoy for fishing, boating and other recreation. Birds, fish, turtles and a variety of other wildlife make their homes in and along these waterways.



The Problem

Indianapolis streams are polluted. Although many factors contribute to pollution in our waterways, a major source is raw sewage overflow from the city's out-of-date sewer system. When it was built many years ago, the sewer system was considered beneficial because it carried both sewage and stormwater away from homes, businesses and streets, as was common practice throughout the United States. Today, as in many cities around the country, Indianapolis' sewer system can no longer handle the amount of sewage and rainwater that flows through it.

As little as a quarter-inch of rain causes raw sewage, toilet paper, and sanitary items to flow into our streams and waterways. Raw sewage overflows occur about 60 times a year in portions of White River, Fall Creek, Pleasant Run, Pogues Run, Eagle Creek and other waterways. About 6 billion gallons of contaminated water goes into these streams each year.



Raw sewage flowing into streams is a health hazard, smells and looks disgusting, hurts our environment and harms the quality of life in our neighborhoods. In many neighborhoods, overflows cause offensive odors in parks, greenways and homes. Raw sewage in our streams prevents us from becoming a world-class city that can attract new businesses, jobs and residents.

The Solutions

RAW SEWAGE OVERFLOW CONTROL PROGRAM

The City of Indianapolis worked with technical experts and the public to develop a long-term plan that includes new sewers, storage tanks, deep storage tunnels and other measures to reduce pollution in area streams. When approved, this plan will represent the single largest investment in water quality in the city's history.

SEPTIC CONVERSION PROGRAM

While the raw sewage overflow program addresses a big part of the problem, efforts are also underway to take care of other contributing factors. For example, Indianapolis has one of the highest concentrations of homes served by on-lot sewage treatment systems of any large city in the country. In many cases these septic systems are failing or have failed, causing health hazards in neighborhood ditches and streams. A septic conversion program is underway to take 18,000 families off septic systems in the next 20 years.

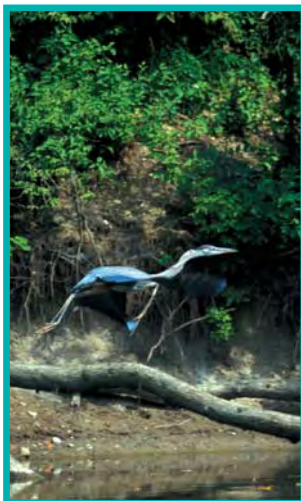
DRAINAGE/FLOOD CONTROL PROGRAM

Stormwater control also plays a major role in helping to improve our waterways. When it rains or snow melts, water runs off driveways, parking lots, sidewalks and roofs into the stormwater drainage system. The City-County Council established a user fee in 2001 to fund drainage, flood control and water quality improvements. Numerous projects to control stormwater and improve neighborhood flooding problems are already underway.



Our Investment

Improving water quality requires an investment in our future. Mayor Bart Peterson has already invested more than \$50 million to modernize the city's wastewater treatment plant and improve the sewage collection system. By 2006, we will spend \$184 million on early projects to address this problem. Although the city's total cost won't



be known until the final long-term plan is approved by state and federal agencies, we will have to invest at least \$1 billion to implement the work contained in the plan. As work proceeds, the city's focus will be on directing dollars toward solutions, not fines and legal fees.

The city's goal is to create an affordable plan that will greatly improve water quality and protect people's health. However, we can't afford to expand the sewer system to capture every large storm. This means there will still be some overflows into our streams during the heaviest rainfalls.

What's Next?

The city is working closely with the public and state and federal regulatory agencies to develop the long-term plan. Once approval is obtained, implementation of the plan can begin. However, the city is not waiting to take action. More than 50 "early action projects" are already underway to reduce raw sewage overflows in streams that flow through our neighborhoods and near parks and schools.

Join the Clean Stream Team

We need you to join us in solving the problem of raw sewage in our streams. Everyone has a role – individual citizens, government, non-profit organizations, businesses, industry, and community groups.

Everyone can adopt environmentally friendly practices:

- 💧 Clear gutters and storm sewer drains of leaves and debris.
- 💧 Properly dispose of motor oil, antifreeze, battery acid and household chemicals. Call 327- 4TOX to learn how.
- 💧 Disconnect downspouts and sump pumps connected to sewers.
- 💧 Reduce water use in your homes and businesses.
- 💧 Compost leaves, branches and grass clippings.

For those interested in getting more involved, come to a public meeting and learn more about what is being done and let us make a presentation to your civic association or neighborhood group.

To learn more about the Indianapolis Clean Stream Program, visit www.indycleanstreams.org.

To receive notification of sewer overflows, call the Sewer Overflow Hotline at 327-1643 or sign up for email alerts at www.indycleanstreams.org.

For other citizen issues and concerns, please call the Mayor's Action Center at 327-4MAC (327-4622).

Clean Stream Program



Pump Bypass to Reduce Overflows at Belmont Treatment Plant

The City of Indianapolis Department of Public Works is working to reduce millions of gallons of sewage overflows at the Belmont Advanced Wastewater Treatment Plant. Overflows at the Belmont plant cause 2.2 billion gallons of untreated wastewater to enter the White River each year.

This project provides additional treatment capacity at the Belmont plant by diverting more flow to the city's Southport Advanced Wastewater Treatment Plant. The Southport plant often has capacity during wet weather when Belmont is overloaded. The project gets more flow to Southport by increasing the pumping rate through a diversion structure to 30 MGD from 17 MGD.



PROJECT BENEFITS:

- Provide for an additional 13 MGD treatment by utilizing the available treatment capacity at Southport AWT Plant.
- Reduce raw sewage overflow volumes and frequency.
- Improve water quality and protect public health.

For more information visit our Web site at www.indycleanstreams.org

Project Cost: \$1.3 million

Completion Date: October 1997

Status: In-Service

Clean Stream Program



SCADA System Phase 1

The City of Indianapolis Department of Public Works recently completed a study for a Supervisory Control and Data Acquisition (SCADA) system. This system will help improve the operation of the sewer system and reduce sewage overflows.

This study recommends that the city construct a SCADA system that uses a wireless broadband communication system incorporating the countywide microwave structure of the Metropolitan Emergency Communications Agency (MECA). A SCADA system consists of three primary elements: remote site equipment, a communication network, and control facility.

SCADA systems collect information from numerous remote sites on either a real-time or periodic basis so that system managers can be aware of system status, identify current operating needs, manage equipment maintenance, and take action to minimize or avert operational upsets. Effective use of SCADA will optimize the use of a wastewater conveyance system while saving operation and maintenance costs.

The proposed SCADA system is intended to provide the capabilities and performance necessary for it to become the cornerstone management tool for the city's wastewater collection system. This system will replace the city's existing wastewater conveyance alarm system. The proposed SCADA system will provide for monitoring and control of wastewater sites located throughout the Marion County area. The city currently owns a large number of wastewater sites that either control wastewater flow or provide information important in managing that flow. Implementation of the raw sewage overflow long-term control plan will add a significant number of new facilities.



ANTICIPATED PROJECT BENEFITS:

- Improved data reporting from remote lift stations will make operation and maintenance more efficient and will allow for faster diagnosis of lift station problems.

For more information visit our Web site at www.indycleanstreams.org

Design Engineer:	Donohue & Associates
Project Cost:	\$3 million
Completion Date:	August 2005 (Design)
Status:	Design Completed

Clean Stream Program



White River Inflatable Dam (West Street)

The City of Indianapolis Department of Public Works has completed a project to keep millions of gallons of raw sewage out of White River near West Street at White River Parkway, East Drive.

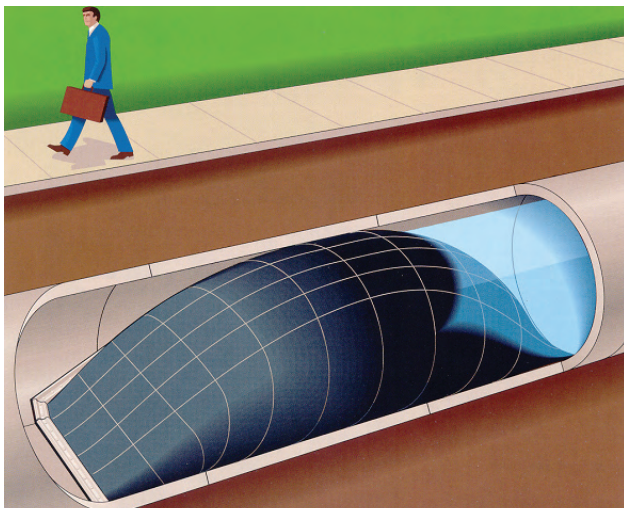
The inflatable rubber dam within the sewer system prevents more than 120,000 gallons of raw sewage and polluted stormwater from spilling into White River with each rainfall. Currently about 178 million gallons overflow each year from this location.

When stormwater enters the sewers, the dam inflates to block the overflow pipe and direct the wastewater to the city's treatment plants. After the storm, when the flows in the sewer system recede, the dam deflates. Inflatable dams like this one help

save money by using existing sewer lines to contain and reduce raw sewage overflows. Electronic sensors upstream and downstream of the dam send data to a centralized computer, which will activate the dam as needed.

This project is part of a \$5.6 million effort to install automated sewage control technologies in locations throughout the city. More work will be required in the future to further reduce overflows along White River.

For more information visit our Web site at www.indycleanstreams.org



Design Engineer: Triad Engineering, Inc.

Contractor: Bowen Engineering Corp.

Inspection Firm: M.D. Wessler & Associates, Inc.

Project Cost: \$1.1 million

Completion Date: September 2003

Project Benefits:

- Prevents up to 120,000 gallons of raw sewage with each rainfall.
- Improves the water quality in White River.

Special Features: Electronic sensors upstream and downstream of the dam will send data to a centralized computer, which will activate the dam as needed.



White River Pinch Valve System (10th Street)

The City of Indianapolis Department of Public Works has completed a project to keep millions of gallons of raw sewage out of White River near 10th street.

The pinch valve system was within the sewers to hold back raw sewage and polluted stormwater from spilling into White River with each rainfall. The pinch valve system diverts rainwater and sewage when sewage pipelines south of the site are at or above capacity. When necessary, the valve closes, allowing flow to be stored upstream. After a storm, when the flows in the sewer system recede, the pinch valve opens and release the stored water.



The pinch valve system diverts flows from sewers that overflow during a storm to sewers that aren't full.

Electronic sensors upstream and downstream of the valve send data to a centralized computer, which will activating the valve as needed.

The White River pinch valve system is part of a \$5.6 million effort to install automated sewage control technologies in locations throughout the city. More work will be required in the future to further reduce overflows along White River.

This project won a 2004 Technical Innovation Award from the American Water Works Association.

For more information visit our website at www.indycleanstreams.org

Design Engineer:	Triad Engineering, Inc.
Contractor:	Bowen Engineering Corp.
Inspection Firm:	M.D. Wessler & Associates, Inc.
Project Cost:	\$1,206,950
Completion Date:	September 2003
Project Benefits:	Improves the water quality in White River.
Special Features:	Electronic sensors upstream and downstream of the pinch valve will send data to a centralized computer, which will activate the valve as needed.

Clean Stream Program



White River/Fall Creek Tunnel Evaluation Study

The City of Indianapolis Department of Public Works is working to reduce sewage overflows to neighborhood streams. The city has completed a preliminary study for a deep underground tunnel that will store millions of gallons of sewage that now flows into White River, Fall Creek and other streams during some wet weather events.

The study represents the city's first look at important issues such as groundwater protection, tunnel length and route, and geology – especially in the bedrock where the tunnel will be built.

Underground solutions are becoming more common in cities because there is little or no room above ground for the facilities we need to build. Following the results of the geotechnical exploration program and considering other factors, the tunnel is expected to be dug approximately 200-250 feet below ground with a tunnel boring machine.

Tunneling minimizes disruption to neighborhoods, but some construction will be required on the surface. The city will need one or two staging areas at ground level to dig a vertical shaft and launch the machine, and another staging area for a retrieval shaft to remove the machine. New sewers and approximately 21 drop shafts will be dug to connect overflow pipes to the tunnel.

The study placed an emphasis on protecting the groundwater supply because parts of the tunnel will run adjacent to city wellfields. The city will ensure wellfield protection through groundwater monitoring, advanced tunnel construction practices, sealing the tunnel with grout and concrete, and limiting the tunnel's fill level and storage time during operation.

The preliminary study suggests the tunnel will be 7.5 to 10.5 miles long and 26-35 feet in diameter. Three different tunnel routes were studied, as shown in Figure 1. The final route will be selected after doing test borings, other studies, and communication with the public.



A typical rock tunnel boring machine is shown in the photo.

The final draft of the Fall Creek Evaluation Study is completed. Based on the initial recommendations, the geotechnical investigation work for the tunnel is currently underway. This work includes ten borings, approximately 350 feet below ground. The final study report and geotechnical was completed in September 2005.

ANTICIPATED PROJECT BENEFITS:

- Meet overflow control and water quality goals of the city's long-term plan.
- Capture raw sewage overflows from Fall Creek, Pogues Run, Pleasant Run and White river and provide storage of captured flows during and after rainfall.
- Improve stream water quality and protect public health.

For more information visit our Web site at www.indycleanstreams.org

Study Consultant: GEC, Inc. and Black & Veatch Corporation

Project Cost: \$2.5 million (Study)

Total Project Cost: \$600 million

Expected Completion Date: September 2005 (Study)

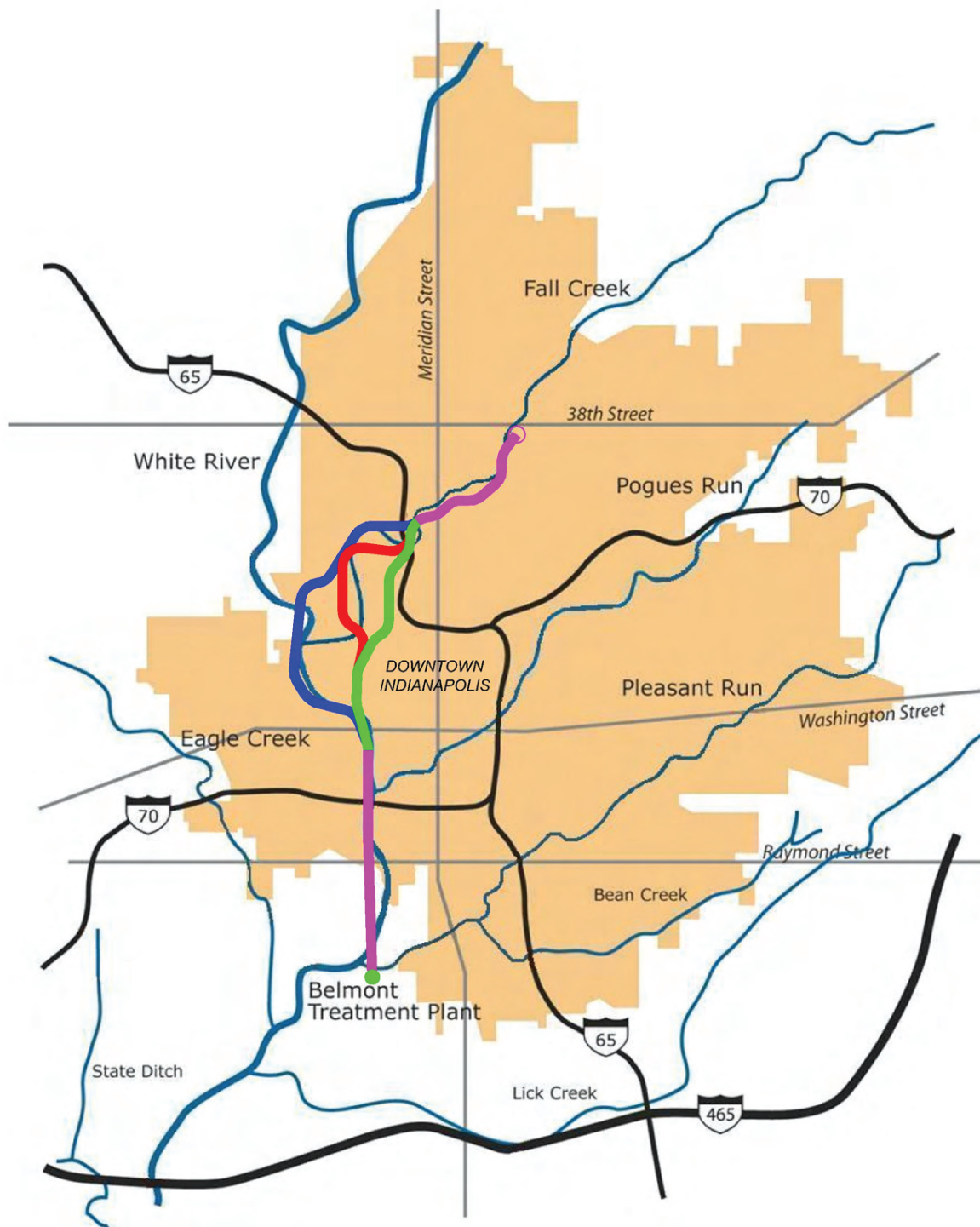


Figure 1 The above map shows the three different tunnel routes considered in the White River/Fall Creek Tunnel Evaluation Study.



White River Pinch Valve System (McCarty & Meikel Streets)

The City of Indianapolis Department of Public Works has completed a project to keep millions of gallons of raw sewage out of White River near McCarty and Meikel streets.

The pinch valve system within the sewer holds back raw sewage and polluted stormwater from spilling into White River with each rainfall. The pinch valve system diverts rainwater and sewage when sewage pipelines south of the site are at or above capacity. When necessary, the valve closes, allowing flow to be stored upstream. After a storm, when the flows in the sewer system recede, the pinch valve opens and release the stored water.

Electronic sensors upstream and downstream of the valve send data to a centralized computer, which activates the valve as needed.

This project is part of a \$5.6 million effort to install automated sewage control technologies in locations throughout the city. More work will be required in the future to further reduce overflows along White River.

This project won a 2004 Technical Innovation Award from the American Water Works Association.

For more information visit our Web site at www.indycleanstreams.org



The pinch valve system diverts flows from sewers that overflow during a storm to sewers that aren't full.

Design Engineer:	Triad Engineering, Inc.
Contractor:	Bowen Engineering Corp.
Inspection Firm:	M.D. Wessler & Associates, Inc.
Project Cost:	\$1.37 million
Completion Date:	September 2003
Project Benefits:	Improves the water quality in White River.
Special Features:	Electronic sensors upstream and downstream of the pinch valve will send data to a centralized computer, which will activate the valve as needed.

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

FALL 2003 | ISSUE 1

Inside This Issue

- 2 Letter from the Director
- 2 City tests wet weather treatment technologies
- 2 Shotcrete used to restore sewers
- 3 Plants to get electrical upgrade
- 3 Team WET schools coming to Indianapolis

Statement Of Purpose

The Indianapolis Clean Stream Team is overseeing more than 50 projects to keep raw sewage out of our waterways and improve the quality of life in our neighborhoods. Stream Line is published quarterly to keep you informed about the city's progress in reducing raw sewage overflows and restoring the health of our streams.

Contact Info

Send letters to:

Indianapolis Clean Stream Team
Attn: Jodi Perras
151 N. Delaware St.
Suite 900
Indianapolis, IN 46204

Tel: 317-327-8720
Fax: 317-327-8699
Email: jperras@indygov.org



LABOR DAY FLOOD HIGHLIGHTS SEWER NEEDS

DPW crews work overtime to respond to rising waters

No combined storm and sanitary sewer system could have handled Labor Day's record rainfall, but the Sept. 1 deluge did raise public awareness of the shortcomings of the city's century-old system.

Newspaper, television and radio accounts of the flood included news of raw sewage overflows and the need for people to stay away from contaminated floodwaters.

"The storms that saturated Indianapolis on September 1 only underscored the need

to upgrade our sanitary and storm sewer systems," said Barbara Lawrence, director of the Department of Public Works. "Raw sewage spilling into our streams is a decades-old problem that we're now taking action to resolve."

Several days of rain, including a record-breaking 7.2 inches on Labor Day, tested the mettle of DPW employees, who also have battled record snowfall and a tornado in the past year. Lawrence praised the work of the department's employees who interrupted their three-day holiday weekend to post street closing signs, staff hotlines, and monitor the condition of levees and bridges.

"Our city's system of storm drains, levees and sewers is comparable to many other urban communities," Lawrence said. "Although there's work to be done to upgrade our system, I am proud of the things we were able to accomplish during the flooding."

Each of the city's levees held back the rising waters as they were designed. A \$12.5 million flood basin completed on Pogues Run last year prevented more than 200 million gallons of water from flooding parts of the eastside and downtown.

In the days following the storm, DPW crews worked 12- to 16-hour shifts to pump
(see "Flooding" page 4)

DPW's Mark Richards collects data from a water-quality monitor on the 16th Street bridge over the White River following the flood.

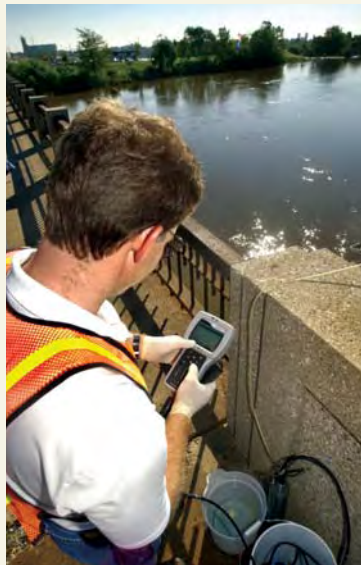


Photo by Charlie Nye, courtesy of The Indianapolis Star

Project Will Help Clean Up Brookside Park

Thousands of gallons of raw sewage will be captured and kept out of Pogues Run in Brookside Park by early next year. Mayor Bart Peterson joined other community and civic leaders in June to break ground on an inflatable dam that will significantly reduce raw sewage overflows in the park.

The inflatable dam is similar to a large balloon. When excess runoff comes into the pipe, the dam will expand to contain it. When flow in the sewer system recedes, the wastewater is directed to the city's treatment plants.

The dam has been installed inside one of Brookside Park's largest sewage outfalls. Nestled inside a 90-inch pipe, the dam can hold up to 500,000 gallons of raw sewage and debris that would otherwise flow untreated into the stream with each rainfall.
(see "Brookside" page 3)

From the Director...



Barbara Lawrence
Director of Public Works

Welcome to the first edition of Stream Line! This quarterly newsletter is designed to keep you informed of the city's progress in reducing raw sewage overflows and restoring the health of neighborhood streams and the White River.

Raw sewage spilling into our streams is a serious problem that we have begun to address. As in many cities around the country, Indianapolis' antiquated sewers can no longer handle the sewage and rainwater that flow through them. Raw sewage in our streams is a health hazard, smells and looks disgusting, hurts our environment and harms our economy and the quality of life in our neighborhoods.

The Department of Public Works is working with state and federal regulatory agencies on a plan to reduce these overflows. This plan, worth \$1 billion, will represent the single largest investment in clean water in the city's history.

But even as we negotiate with regulatory agencies, DPW is moving forward on more than 50 projects to start cleaning our streams and protecting public health. These projects are managed by the Indianapolis Clean Stream Team, a group of city staff and consultants working together to reduce raw sewage overflows.

I hope you use Stream Line to stay informed and involved in the important work of the Clean Stream Team. I encourage you to give us feedback on what you read in these pages. We look forward to hearing from you.

Barbara A. Lawrence

City Tests Wet Weather Treatment Technologies

During wet weather, the city faces a significant challenge in handling flows reaching the Belmont Advanced Wastewater Treatment Plant.

Since May 2003, engineers and operators have been testing wet weather treatment technologies in side-by-side trials to confirm their effectiveness in reducing sewage overflows from the plant under varying conditions. The technologies are especially designed to quickly treat high-rate flows and pollutants.

"These technologies have the potential to save the city hundreds of millions of dollars over conventional treatment while meeting water quality goals," said Carlton Ray, DPW Administrator for Environmental Engineering. Results of the studies will be available next spring.



Ana Johnston adjusts controls on one of the wet-weather treatment units being pilot-tested at the Belmont treatment plant.

Shotcrete Used to Restore Sewers

The city is giving new life to 100-year-old brick and reinforced concrete pipe sewers under Michigan Street by using shotcrete, a spray-on concrete mixture.

The shotcrete is sprayed onto the existing pipe wall after the pipe has been cleaned and steel mesh or bars have been added as reinforcement. After the shotcrete dries and cures, the rehabilitated sewer is stronger than the original sewer.

Shotcrete is less expensive than building a new sewer, and much less disruptive to the streets above. "By applying shotcrete, we can extend the life of these sewers by at least 50 years," said Mike Hill, the city's project manager.



Shotcrete can add life to older sewers at less cost and less disruption than building new sewers.

Plants to Receive Electrical Upgrade

Both the Belmont and Southport wastewater treatment plants are receiving plant-wide electrical upgrades and repairs under a \$5 million project expected to start construction before year's end.

The project will replace aging electrical switchgear, transformers, motor control centers and electrical enclosures that keep the plants running and improving water quality. "This project will improve the reliability of the electrical systems at both treatment plants," said Tricia Banta, the city's project manager.



Team WET Schools Coming to Indianapolis

As part of the Clean Stream Team's education initiative, three Indianapolis middle schools have agreed to participate in an exciting water education program, Team WET Schools. Harshman, John Marshall and McFarland middle schools will be the first Team WET Schools in the Midwest.

Developed by the Council for Environmental Education in Houston, the program will work with teachers to incorporate urban water education into science, social studies, history and other subjects. The activities promote learning about a range of water issues, from ecology and pollution prevention to wastewater treatment and water stewardship. During the 2003-4 school year, each school will also launch a student-driven stewardship project. For more information, contact the Clean Stream Team at 327-8720.

Brookside (continued from page 1)

"This project means better water quality for those who live on the eastside," Mayor Peterson said. "It's simply unacceptable to have raw sewage overflows in a community park that draws parents and children."

Inflatable dams provide "in-line" storage that helps save money by using existing sewer lines to contain and reduce raw sewage overflows. Other projects will be required in the future to reduce overflows even further along Pogues Run.

"Pogues Run flows through the near eastside through three of our parks and through our high school," said Josh Bowling, President of the Near Eastside Community Organization. "We're very excited this project is underway and we'll be excited when it gets finished."

As the installation of the dam concludes, workers are busy completing final construction. The area will be landscaped in early spring.

The Department of Public Works has worked on six similar projects elsewhere in the community. Together, these projects will prevent up to 5 million gallons of raw sewage overflows every time it rains.

The Brookside Park project complements other activities underway to clean up Pogues Run. Three other sewage overflow points upstream of the park already have been eliminated or greatly reduced.

"Each of these projects fits into the mayor's goal of creating a world-class city," said DPW Director Barbara A. Lawrence. "One way we accomplish that goal is by taking care of our neighborhoods and environment, and eliminating these disgusting overflows in our streams."

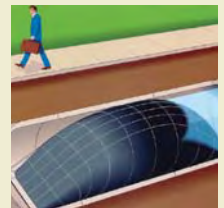


Mayor Bart Peterson, (left), City-County Councillor John Bainbridge, NESCO President Josh Bowling, and DPW Director Barbara Lawrence helped break ground earlier this year for an inflatable dam along Pogues Run. The dam will greatly reduce raw sewage overflows in Brookside Park.

Other In-line Storage Projects

Inflatable dams, pinch valves and other mechanisms prevent sewage overflows by holding flows inside existing pipes until the storm subsides.

In addition to the Brookside Park inflatable dam, the city has other



in-line storage projects completed or underway in the following locations:

- Pleasant Run at Ellenberger Park
- Pleasant Run near Howe Middle School
- White River at West Street
- White River at 10th Street
- McCarty & Meilke streets near White River
- Fall Creek between 32nd and 34th streets, as well as at Illinois Street (four dams)

Flooding (continued from page 1)

water from streets, clean storm drains, remove debris and hand out sandbags, along with other emergency activities.

Crews brought in equipment from Chicago to pump water from Fall Creek Parkway south of 38th Street, reopening the waterlogged street to morning commuters on September 3.

The onslaught of water overburdened the city's sewer system, causing more than 350 million gallons of raw sewage and stormwater to overflow into area waterways. However, the city's two wastewater treatment plants – Belmont and Southport – worked at full capacity for several days, successfully treating more than 500 million gallons of raw sewage and stormwater per day.

"Our systems performed remarkably well given the conditions we faced," added Mario Mazza, Administrator of Water Management Services. "We saw no failures

in our wastewater lift stations, our levees, or our treatment plants."

DPW crews also removed eight tons of trees over a two-day period from an area near 10th Street and Pagues Run. The engineering division felt the trees might cause structural damage to a bridge at the site.

Reminded of the damage rising floodwaters can cause, the city is moving forward with dozens of projects to reduce raw sewage overflows and control stormwater. Even with those projects in place, however, the Labor Day storm would have overwhelmed the system.

"No city can afford to prevent damage from a storm of that size, and that's not our goal," Lawrence said. "However, we are moving forward to make sure our infrastructure is better prepared to manage the more frequent, non-historical storms today and in the future. At the Department of Public Works, meeting that goal is both our daily challenge and our long-term commitment."



The Labor Day rainfall caused flooding at many homes and businesses, such as this location at Fall Creek Parkway and Emerson Way.



National Guardsmen assisted city staff by creating hundreds of sandbags that were made available to home and business owners to hold back rainwater.

INDIANAPOLIS
CLEAN STREAM TEAM

151 N. Delaware St., Suite 900
Indianapolis, IN 46204

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program



made with recycled paper

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

Winter 2003-04 | Issue 2

Inside This Issue

- 2 New DPW Director Named
- 2 Honorary Clean Stream Team members recognized
- 3 Tank Project Benefits White River

Statement Of Purpose

The Indianapolis Clean Stream Team is overseeing many projects to keep raw sewage out of our waterways and improve the quality of life in our neighborhoods. *Stream Line* is published quarterly to keep you informed about the city's progress in reducing raw sewage overflows and restoring the health of our streams.

Contact Info

Send letters to:

Indianapolis Clean Stream Team
Attn: Jodi Perras
151 N. Delaware St.
Suite 900
Indianapolis, IN 46204

Tel: 317-327-8720
Fax: 317-327-8699
Email: jperras@indygov.org



**Sewer Overflow
Hotline:
327-1643**

STREAM IMPROVEMENTS BENEFIT PLEASANT RUN

Inflatable dam will help reduce overflows

A project underway near Howe Middle School will keep millions of gallons of raw sewage out of an eastside stream.

An inflatable rubber dam within the sewer system will prevent thousands of gallons of raw sewage and polluted stormwater from spilling into Pleasant Run with each rainfall. Currently, about 17 million gallons overflow each year from this location.

As in many cities around the country, Indianapolis' sewer system is antiquated and can no longer handle the amount of sewage and rainwater that flows through it. As little as a quarter inch of rain can cause raw sewage to spill into portions of Pleasant Run, White River, Fall Creek, Pogues Run and other area waterways.

"Raw sewage in our streams is a health hazard, smells and looks disgusting, hurts our environment and harms the quality of life in our neighborhoods," said Barbara A. Lawrence, Director of the Department of Public Works (DPW).

The inflatable dam, similar to a large balloon, is being placed inside the sewer to trap contaminated water that would otherwise overflow into Pleasant Run.

When storm runoff enters the sewers, the dam will inflate to block the overflow pipe and



Consultants from Triad Engineering Inc. prepare to enter the sewer system near Howe Middle School to verify conditions prior to completing design work on an inflatable dam. They are (left to right) Zig Resiak, John Zant and Rob Suttero.

direct the wastewater to the city's treatment plants. After the storm, when the flows in the sewer system recede, the dam will deflate.

Inflatable dams help save money by using existing sewer lines to contain and reduce raw sewage overflows. Electronic sensors will activate the dam as needed and will eventually send data to a centralized computer, allowing remote and real-time control of flows within the sewer.

"This system allows us to actively control the amount of wastewater going into any part
(see "Pleasant Run" page 4)



Mayor Bart Peterson presents a Team WET Schools certificate to John Marshall Middle School Principal Jamyce Banks.

Teachers Bring Water Lessons into Classroom

Teachers at three Indianapolis Public Schools campuses have learned how to conduct an urban waterway checkup and how to mix up a recipe for clean water – lessons they are taking to their classrooms through the Team WET schools program. WET stands for Water Education for Teachers.

Teachers at John Marshall, Harshman and McFarland middle schools were trained at the beginning of the 2003-04 school year to bring urban water issues into all kinds of classroom activities.

The urban waterway checkup taught educators about the different environments through which an urban stream travels, and the effects
(see "Teachers" page 4)

Find us on the Web at: www.indycleanstreams.org

New Director Takes the Helm at DPW



James Garrard

The Department of Public Works (DPW) welcomed James Garrard as its new director in January. Garrard, who previously served as administrator of the city's Animal Care and Control Division, started his new position January 12.

Garrard takes over for Barbara Lawrence, who was appointed city controller by Mayor Bart Peterson and will now manage the city's budget and finances. Ms. Lawrence had served as DPW director since January 2002.

Garrard will manage a 595-person department that builds and maintains the city's sewer, wastewater treatment and stormwater systems. DPW employees also maintain city streets, levees and traffic systems; handle trash collection and disposal; and inspect air, land and water for environmental health and safety.

Under Garrard's leadership, DPW will continue to work with state and federal regulatory agencies on a plan to reduce raw sewage overflows into our streams and waterways. The plan, worth at least \$1 billion, will represent the single largest investment in clean water in the city's history.

Garrard also will oversee progress on numerous projects that are underway to start cleaning our streams and protecting public health.

Garrard is credited with a turnaround in the city's Animal Care and Control Division. During his tenure, the division dramatically increased outreach and education efforts and worked with volunteer groups and local media to raise awareness of the shelter and animal-related issues. A 38-year-old attorney, Garrard previously served as special counsel in the Office of Corporation Counsel.

"I am excited about working with the many constituents DPW serves to continue to advance our city as a safe and clean place for everyone," said Garrard.

Ms. Lawrence earned high marks for her management of DPW and will stay involved in helping the department finance water quality improvement projects. In recognition of her leadership, she was named an honorary member of the Clean Stream Team in December.

"I am proud to have headed a department with such a committed and hard-working group of employees," said Lawrence. "We faced several unusual natural events during my administration such as last year's Labor Day flooding, but the DPW staff always met the challenges and performed admirably."

Organizations, Councilwoman Honored for Environmental Leadership

The Indianapolis Department of Public Works honored three organizations and a retiring City-County councilwoman in 2003 for their leadership on water quality issues.

Former City-County Councillor Beulah Coughenour received honorary membership in the Indianapolis Clean Stream Team on Dec. 3. Among many accomplishments during her 28 years on the council, she spearheaded creation of a stormwater utility to establish dedicated funding for drainage and flood control projects in Marion County. She did not seek re-election in 2003.



Beulah Coughenour

On Oct. 9, the department presented Eli Lilly and Company, the Rotary Club of Indianapolis, and the Center for Earth and Environmental Science at Indiana University-Purdue University at Indianapolis (IUPUI) honorary team membership. Together, they have created an environmental restoration project that planted six acres of trees along the White River just west of the IUPUI campus.

"All along we've known improving water quality would be a team effort," said Department of Public Works Director Barbara A. Lawrence. "City government cannot do it alone. These awards recognize and encourage voluntary community efforts to protect and restore our streams."

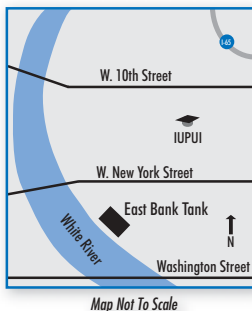
If you know someone deserving of the Clean Stream Team award, visit www.indycleanstreams.org to submit a nomination form.



Three community partners were recognized for their work in restoring eight acres along the White River. Pictured (left to right) are honorees Todd Lugar, Rotary Club of Indianapolis; John Wilkins, Eli Lilly and Company; Barbara Lawrence, DPW director; and honoree Dr. Lenore Tedesco, IUPUI.

Tank Project Benefits White River

Along the east bank of White River near downtown, the Department of Public Works is building a 3-million-gallon underground storage tank that will significantly reduce raw sewage overflows. The concrete tank is being built just south of the New York Street bridge and west of the Indiana University-Purdue University at Indianapolis campus.



Tank benefits

The tank will reduce one of the city's largest sources of raw sewage overflow, known as CSO 039. Between July and December 2001, overflows occurred 29 times at this location. With the storage tank in place, five overflows would have occurred.

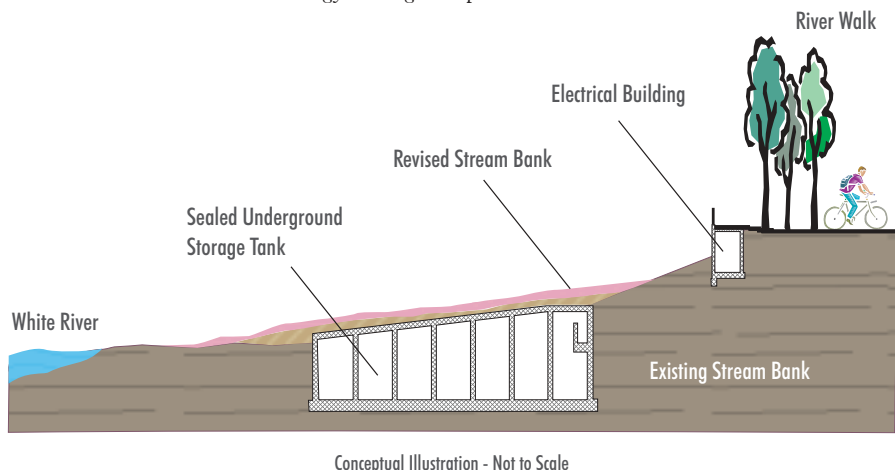
Construction details

Donohue & Associates, Inc., designed the \$5.84 million tank so it can be expanded later to control even more overflows, if necessary. Thieneman Construction, Inc., is managing the construction project, which is expected to be complete by Spring 2005. Inspection services are being performed by Malcolm-Pirnie, Inc.



What to expect

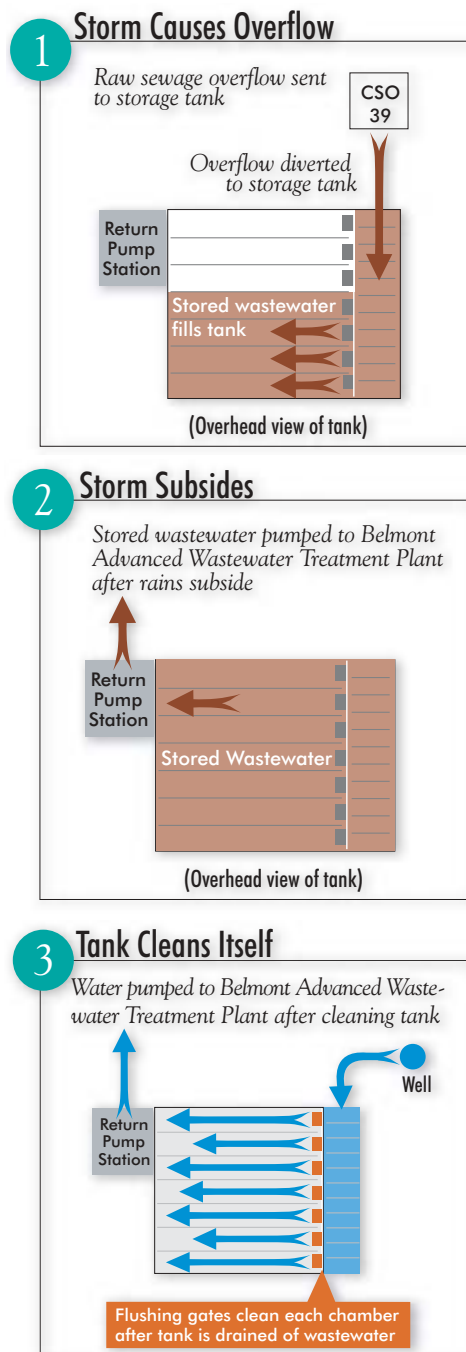
When complete, landscaping will conceal the tank and its control structures so visitors to White River State Park will notice only that water quality has improved – and not the unseen technology making it all possible.



How the tank will work

When rains fall, a combination of raw sewage and stormwater that would otherwise overflow into the river will instead flow into the storage tank and its series of parallel chambers. As one chamber fills up, the sewage-stormwater mixture will flow into and fill up the next chamber, and so on, until all the chambers are full. When rains subside, the tank will pump the stored wastewater back into the sewer system for treatment at the Belmont Advanced Wastewater Treatment Plant.

When the wastewater has drained away, flushing gates will release water to clean out each chamber of the storage tank.



Pleasant Run (continued from page 1)

of the sewer system,” said Carlton Ray, DPW’s Administrator of Environmental Engineering. “We will now be able to maximize the amount of wastewater inside the sewer system and minimize overflows into the streams.”

Construction is expected to be complete by early spring.

The \$500,000 project near Washington and Emerson streets also will help reduce raw sewage flowing through Christian Park and Garfield Park after a rainfall. It is part of a \$5.6 million effort to install automated sewage control technologies in locations throughout the city, including:

- 1) Pleasant Run at Ellenberger Park
- 2) Pagues Run at Brookside Park
- 3) White River at 10th Street
- 4) McCarty and Meikel streets near the White River
- 5) West Street near the White River.

The city completed four other similar projects last year along Fall Creek.

Teachers (continued from page 1)

various land uses have on water quality. While mixing a recipe for clean water, teachers learned how to make non-toxic, alternative cleaners and to test them against traditional cleaners. Teachers also explored water-related sayings from different cultures to study literal and figurative uses of language and what you can learn about cultures from their sayings.

“I gained plenty of ideas for my classroom,” one teacher said following the training.

Another was pleased “that all the activities are being aligned with state standards so that I can use WET in the City in my standards-based classroom.” The teachers participating in the program teach in a variety of disciplines, including science, language arts, special education and mathematics.

Mayor Bart Peterson kicked off the Indianapolis Team WET Schools program on September 29, 2003, when he designated John Marshall Middle School as the first Indianapolis Team WET School. The Indianapolis Clean Stream Team and Department of Public Works sponsor the Team WET Schools program. Volunteers from DPW and the team will provide expertise in local water issues to the teachers throughout the school year.



Mayor Bart Peterson, Indianapolis Public Schools Board Vice President Dr. Mary Busch (second from right), and John Marshall Principal Jamyce Banks (far left) are joined by students at the September 29 designation ceremony.

INDIANAPOLIS
CLEAN STREAM TEAM

151 N. Delaware St., Suite 900
Indianapolis, IN 46204

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program



made with recycled paper

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

Spring 2004 | Issue 3

Inside This Issue

- 2 From the Director...
- 2 Pipeline Should Stem Overflows
- 2 Ozonation Will Benefit Fish

Statement Of Purpose

The Indianapolis Clean Stream Team is overseeing many projects to keep raw sewage out of our waterways and improve the quality of life in our neighborhoods. Stream Line is published quarterly to keep you informed about the city's progress in reducing raw sewage overflows and restoring the health of our streams.

Contact Info

Send letters to:
Indianapolis Clean Stream Team
Attn: Jodi Perras
151 N. Delaware St.
Suite 900
Indianapolis, IN 46204

Tel: 317-327-8720
Fax: 317-327-8699
Email: jperras@indygov.org



**Sewer Overflow
Hotline:
327-1643**

IMPROVEMENTS UNDERWAY AT TREATMENT PLANTS

New basins will reduce bypasses during wet weather events

Although it will take up to 20 years to fully implement the city's plan for controlling raw sewage overflows into area streams, several "early action projects" are already underway to clean our waterways. Some of these projects involve improvements at the city's wastewater treatment plants.



Flow Equalization Basins

Flow equalization basins and a new pumping station will reduce bypasses and overflows at both the Belmont and Southport Advanced Wastewater Treatment (AWT) plants.

Belmont, the older of the two plants, receives the vast majority of the city's wet weather flows. The Belmont basins will reduce the frequency and volume of bypasses to the White River by temporarily storing flows during wet weather, until the plant has capacity to treat the flows.

The \$15.3 million wet weather upgrades at the Belmont AWT plant include two earthen-walled, double-lined flow equalization basins and two combination concrete storage tanks / primary clarifiers. Combined together, these facilities will store up to 38 million gallons of wastewater.

(see "Improvements" page 3)

E-mail, Telephone Hotline Provide Overflow Warnings

When it comes to protecting Indianapolis residents from raw sewage overflows, projects to clean up waterways go hand-in-hand with public education on the hazards of urban waterways.

That's why the City of Indianapolis has taken the lead in informing residents about raw sewage overflows from the city's antiquated sewer system.

In 2002, Indianapolis became the first Indiana community to issue alerts when sewage overflows were predicted due to rain or snow forecasts. Hundreds of citizens now access these alerts through e-mail or the city's telephone hotline.

Both methods warn citizens when overflows are expected and educate them about the hazards of sewage in our streams.

(see "Notification" page 4)

Health and Safety Tips

To protect your health, take the following protective actions when recreating along city streams:

- Avoid contact with urban streams, especially during and three days after rain.
- Alter recreational activities to ones that do not contact urban waterways. For example, try walking or biking along a stream rather than swimming, wading or water skiing.
- Always wash your hands after contacting water in urban streams, especially before eating.
- Use a waterless hand sanitizer at outings that occur near urban streams.

Find us on the Web at: www.indycleanstreams.org

From the Director...

James Garrard
Director of Public Works



As we look forward to completing a plan to significantly reduce the number of raw sewage overflows into Indianapolis waterways, I want to extend a personal invitation to you to participate in the process. While work to reduce these disgusting overflows is already underway, we still need your input and involvement.

In June, the city will begin hosting meetings to give you a look at cleanup alternatives for each of the five sewage-impacted watersheds: Fall Creek, Pogues Run, Pleasant Run, White River, and Eagle Creek. And while we welcome your input at any stage of the process, this will be your first formal opportunity to review specific alternatives for restoring waterways in your part of Indianapolis.

Later this fall, we anticipate a month-long public comment period on the revised long-term control plan, which we must submit to state and federal regulators. There will be a formal public hearing during this time, as well.

Your comments and suggestions are welcomed at any point during the next few months as the city finalizes its plan. Visit our Web site at www.indycleanstreams.org for more information. You can ask a question, make a comment, or request a speaker for your next neighborhood meeting. As we proceed to finalize our plans, we'll use the Web to publicize upcoming meetings and to address your comments or questions.

We want to make sure you have the best possible understanding of options for reducing the number of raw sewage overflows, how much they might cost, and the benefits they will ultimately achieve. We've said it all along and continue saying it today: we cannot do this alone. A program of this magnitude requires careful planning, due diligence, and of course, upholding our commitment and responsibility to giving you ample opportunity to participate in the process.

Thank you for your time and, just as importantly, your input.

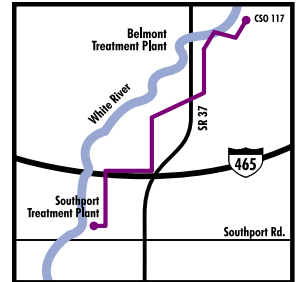
PIPELINE SHOULD STEM OVERFLOWS

You don't often hear the words "diamond in the rough" used to describe wastewater treatment facilities. But that's how the Southport Advanced Wastewater Treatment Plant is being billed for its potential role in reducing sewage overflows into the White River.

Heavy rainfalls often overwhelm the Belmont Advanced Wastewater Treatment Plant, which receives most of its flow from the city's combined storm and sanitary sewer system.

A new connection to the Southport plant should bring significant relief to Belmont.

Southport currently receives most of its flow from the separate sewer areas, which aren't as affected by wet weather. As a result, when Belmont is overwhelmed, Southport often has excess capacity that the city cannot use.



The Belmont-to-Southport Interplant Connection will create a 7-mile pipeline between the two facilities. The pipeline will carry as much as 150 million gallons of wastewater per day to Southport. Southport peak treatment capacity also will be expanded from 150 to 375 million gallons per day.

"This project has been needed for a long time and it's good to know that it's moving forward," said John Morgan, a project manager with the Department of Public Works. "The connection's main purpose will be to balance flows between the two plants during peak periods."

Ozonation Will Benefit Fish

Aquatic life should soon benefit from higher oxygen levels in the White River as the city returns to high purity oxygen treatment and ozonation for disinfection at its advanced wastewater treatment plants.

Ozone will replace chlorine as the city's disinfection method, in the final step before treated effluent is discharged to the river. City engineers say ozone is superior at removing viruses and is effective against harmful waterborne organisms. In addition, ozone's chief by-product is oxygen, which when added to the river will benefit fish and other aquatic life.

Indianapolis was the first large U.S. city to ozonate wastewater in the 1980s. Ozonation was effective, but due to costs and maintenance issues, it was abandoned after 1994. Technology improvements have recently made ozonation more reliable and cost effective with less maintenance. It is estimated that the \$18-20 million oxygen and ozonation systems will be operating in 2006.

IMPROVEMENTS (continued from page 1)

The \$12.8 million Southport upgrade aims to reduce combined sewage overflows to Little Buck Creek and the White River. The wet weather improvements at the Southport AWT plant include a new 75 million gallon/day raw sewage pump station, new 48-inch force mains to convey flows, and an earthen-walled double-lined equalization basin for storage and later treatment.

The two-plant project was designed by HNTB Corporation of Indianapolis and is being constructed by Bowen Engineering Corporation, which began work in January. The project is scheduled for completion in June 2006.

"This project will greatly help manage current flows reaching the city's AWT plants that now cause bypasses or overflows," said Jim Parks, Senior Project Engineer for DPW's Engineering Division. "It will improve water quality by capturing between 1.5 and 2.5 billion gallons of combined sewage for later treatment that otherwise would have added pollution to the river."

Bio-Roughing System Clarification (BRSC) Pilot Study

While those short-term improvements are underway, the city has been studying long-term wet weather treatment options at Belmont. A Bio-Roughing System Clarification (BRSC) Pilot Study was conducted over a 6-month period to field test intermediate clarification using conventional and enhanced high rate technologies.

With a quick startup time and relatively small footprint, these technologies have the operational flexibility to treat peak wet weather flows at the Belmont plant.

Belmont's secondary treatment capacity can be doubled by uncoupling the two-stage nitrification process and inserting intermediate clarifiers between the bio-roughing towers and the oxygen nitrification system (see diagram). During wet weather, flows entering the plant could take two different routes – with each providing biological treatment and disinfection before discharge to the White River.

The pilot study by Shrewsbury & Associates, with subconsultants Bernardin Lochmueller & Associates, Inc. and Greeley and Hansen LLP, was finalized earlier this year. Construction could be underway by 2007, with an estimated cost of nearly \$56 million.

Steps of Wastewater Treatment

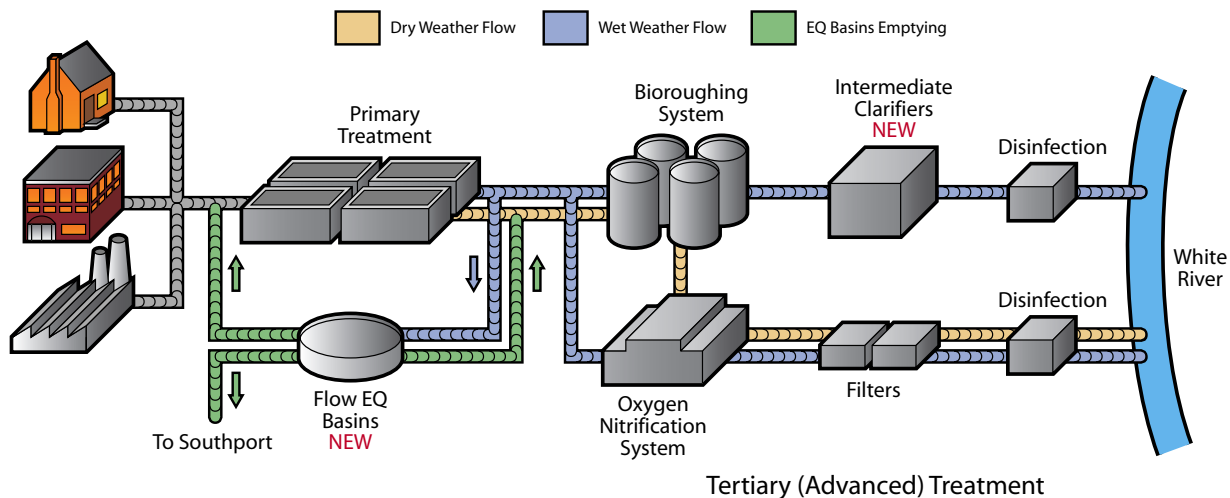
Wastewater sources: wastewater enters the plant from many sources, including homes, businesses and industry

Primary treatment: trash, grit and solids are removed from the wastewater

Secondary treatment: waste and other organic matter is consumed by bacteria and other organisms in the bioroughing and oxygen nitrification systems.

Tertiary (advanced) treatment: filters remove additional pollutants to create a high-quality effluent.

Disinfection: kills any harmful organisms before discharge to the White River.



The diagram above illustrates how the Belmont Advanced Wastewater Treatment Plant will manage both wet-weather and dry-weather flows in the coming years. During dry weather, flows follow the gold-colored path, moving from primary treatment to secondary treatment (bioroughing/oxygen nitrification systems), then to tertiary treatment (filters), followed by disinfection. During wet weather, flows follow the blue-colored path, moving from primary treatment to secondary treatment (bioroughing), then to tertiary treatment (oxygen nitrification system/filters), followed by disinfection. The new intermediate clarifiers will enable the city to "uncouple" the bioroughing and oxygen nitrification systems during peak wet weather flows — sending some flows through ONS, filtration and disinfection, and then on to advanced treatment and disinfection, and the remaining wet-weather flows through the bioroughing system, new clarifiers, and disinfection. In addition, the new flow equalization basins will help capture and store peak flows for later treatment. The green path illustrates three different options for emptying the flow EQ basins after a wet weather period.

NOTIFICATION (continued from page 1)

“Our goal is to keep people out of streams, particularly when it’s most unhealthy to be there, which is shortly after a rainfall,” said Victoria Cluck, Strategic Planning Administrator for the Indianapolis Department of Public Works. “We see the notification program as a proactive way for people to protect themselves and their families.”

A state rule required 105 Indiana communities to establish similar notification programs this year. The Indianapolis program offers warnings in two ways:

E-mail: Citizens can sign up for e-mail notification at www.indycleanstreams.org by clicking on “Public Notification Program.” The e-mails are sent to about 300 people when weather forecasts indicate a strong chance that storms might cause an overflow.

Telephone Hotline: By calling (317) 327-1643, citizens can access current information about raw sewage overflows in area streams. During and three days after a storm, the hotline plays a recorded warning to stay away from waterways where sewage overflow signs are posted.

DPW and the Marion County Health Department have posted signs near sewage outfalls, parks, and public access points to warn residents that sewage can pollute waterways during wet weather. The city also notifies residents of the program through a water bill insert and mailings to community organizations, schools and day care centers.

Starting this year, the city-owned cable station, Channel 16 (WCTY-TV), will be running sewage overflow warnings, as well.

“The number of people signed up for the public notification program continues to grow,” added Cluck. “We believe this is a simple yet important program that everyone can utilize to reduce their risk when around urban streams.”



INDIANAPOLIS CLEAN STREAM TEAM

151 N. Delaware St., Suite 900
Indianapolis, IN 46204

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program



made with recycled paper

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

Fall 2004

Inside This Issue

- 2 Why Do Our Sewers Overflow When It Rains?
- 4 Overview of Options
- 10 Making the Comparison

Statement Of Purpose

The Indianapolis Clean Stream Team is overseeing many projects to keep raw sewage out of our waterways and improve the quality of life in our neighborhoods. Stream Line is published quarterly to keep you informed about the city's progress in reducing raw sewage overflows and restoring the health of our streams.

Contact Info

Send letters to:

Indianapolis Clean Stream Team
Attn: Jodi Perras
151 N. Delaware St.
Suite 900
Indianapolis, IN 46204

Tel: 317-327-8720
Fax: 317-327-8699
Email: jperras@indygov.org



**Sewer Overflow
Hotline:
327-1643**

REDUCING SEWAGE OVERFLOWS: YOUR INPUT NEEDED

Greetings,

The City of Indianapolis is finalizing a plan to reduce raw sewage overflows into our rivers and streams, and we need your input.

In 2001, we proposed a plan to add capacity to our 100-year-old sewer system. Since then, we have been negotiating with regulatory agencies while also implementing many short-term projects to clean our streams. In the coming months, we hope to finalize a long-term plan and gain state and federal approval to move ahead with more projects.

You can participate in developing the plan by:

- Reviewing the information in this newsletter and returning the response card, by October 30
- Attending one of our public meetings (see the schedule below), or
- Visiting our Web site at www.indycleanstreams.org between October 14-30.

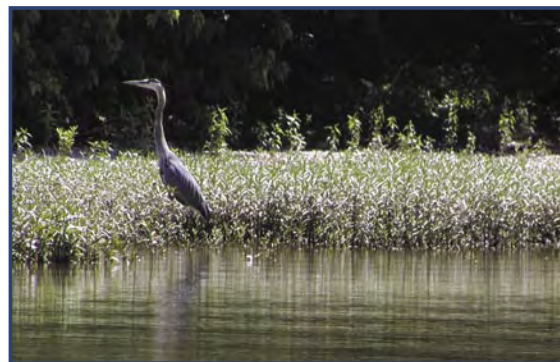
As you may know, this is not the only financial challenge facing our community. Recently, I proposed "Indianapolis Works," a plan to simplify and streamline local government and tax structures in Indianapolis and Marion County to make our community even more competitive with other cities and even more attractive to families, homeowners, businesses, and entrepreneurs.

Reducing the hazards, smells and sight of raw sewage in our neighborhoods is another challenge we must face to avoid costly fines and remain a vital, growing community.

Thank you for taking time to learn about these issues. Your opinion matters to me.

Sincerely,

Bart Peterson



PUBLIC MEETING SCHEDULE

Thursday, October 14	Garfield Park Multipurpose Room	2450 S. Shelby St.	7:00 PM
Tuesday, October 19	Julia Carson Government Center, Rm A	300 E. Fall Creek Parkway, N. Drive	7:00 PM
Thursday, October 21	Christamore House Auditorium	502 N. Tremont	6:00 PM
Monday, October 25	Brookside Park Auditorium	3500 Brookside Parkway S. Drive	7:00 PM
Tuesday, October 26	Riviera Club	5640 N. Illinois Street	7:00 PM

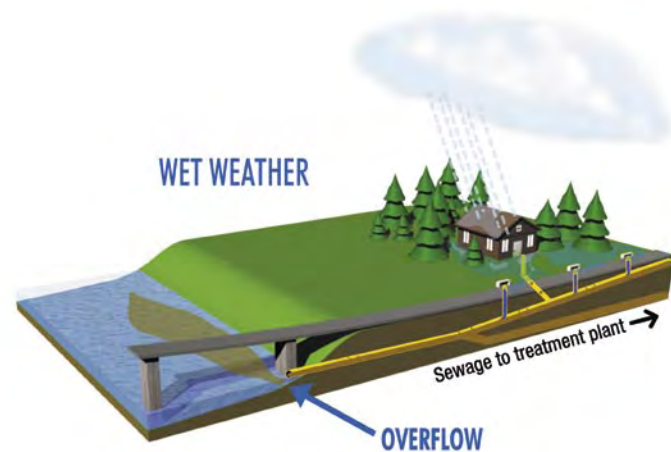
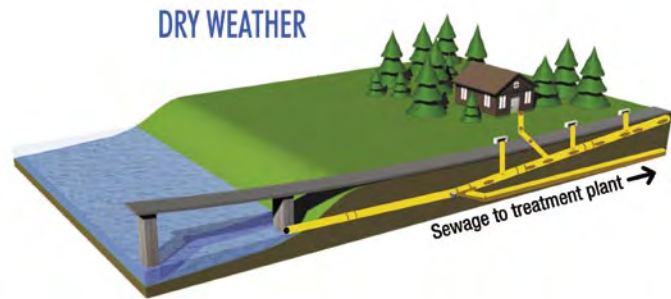
The City of Indianapolis will host five public meetings to provide more information on the options. These meetings give the public an opportunity to provide feedback before the city decides on the long-term plan. The final plan will be subject to the approval of the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management.

Find us on the web at: www.indycleanstreams.org

WHY DO OUR SEWERS OVERFLOW WHEN IT RAINS?

More than 100 years ago, Indianapolis built a storm sewer system to carry rainwater and melting snow away from homes, businesses and streets. When indoor plumbing came later, homeowners and business owners hooked their sewage lines to these storm sewers, combining stormwater and raw sewage into one pipe. This was common practice in many U.S. cities, especially in the Northeast and Midwest.

During dry weather, a combined sewer system works much like a separate sewer—carrying all sewage to the treatment plant for treatment. However, when it rains or snow melts, the sewer can be overloaded with incoming stormwater. When this happens, the sewers are designed to flow over internal dams in the underground pipe system and into nearby streams and rivers. Without these overflows, sewage would back up into basements and streets. Today, when building new sewer systems, we build separate sewers for stormwater and sewage.

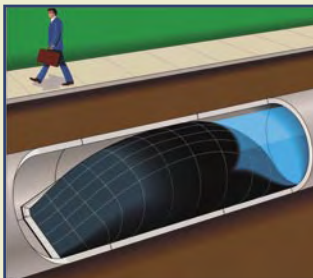


PROJECTS ALREADY UNDERWAY

Many projects have already begun to repair old sewer lines, build new storage tanks and expand treatment plants. Together, these “early action projects” will remove more than 2 billion gallons of overflows from our waterways each year.

At the same time, the City of Indianapolis has been working with the U.S. Environmental Protection Agency and the state to develop a long-term control plan that will provide a roadmap for future sewer repair and solutions to Indianapolis’ raw sewage overflow problems.

Some of the early action projects include:



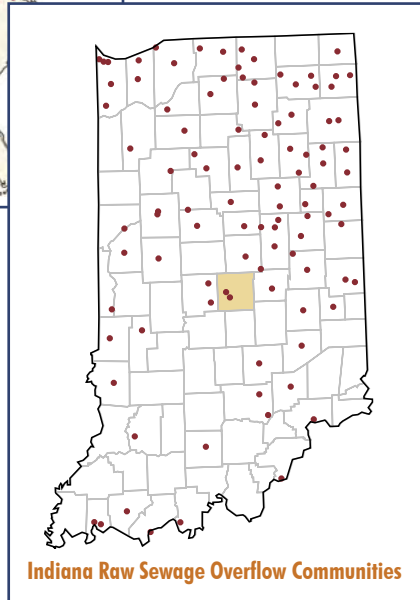
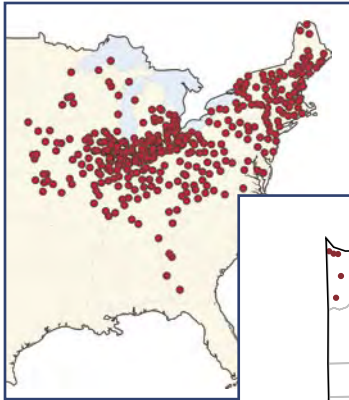
Inflatable Dams

Inflatable dams have been constructed to keep millions of gallons of sewage out of Pleasant Run near Ellenberger Park and Howe Middle School and Pogues Run at Brookside Park.

When stormwater enters the sewers, the dams will inflate to block the overflow pipe and direct the wastewater to the city’s treatment plants. After the storm, when the flows in the sewer recede, the dam will deflate. Inflatable dams help save money by using existing sewer lines to contain and reduce raw sewage overflows.

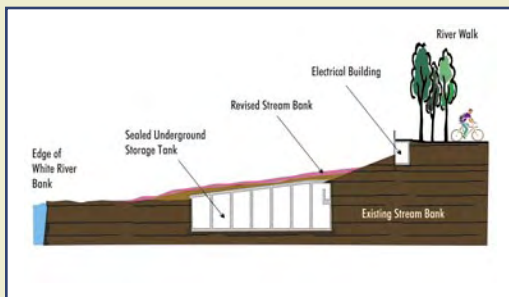
Electronic sensors upstream and downstream of the dam will send data to a centralized computer, which will activate the dam as needed. These projects are part of a \$5.6 million effort to install automated sewage control technologies in locations throughout the city.

HOW BIG IS THIS PROBLEM?



Many cities with combined sewer systems have problems with raw sewage overflows when it rains. These overflows contain not only stormwater, but also untreated human and industrial waste, toxic materials and debris. Combined sewer systems serve roughly 772 communities containing about 40 million people, according to the U.S. Environmental Protection Agency. Most communities with combined sewer systems are located in the Northeast and Great Lakes regions and in the Pacific Northwest. Indiana has 105 communities with combined sewers.

Raw sewage in our streams is a health hazard, smells and looks disgusting, hurts our environment and harms the quality of life in our neighborhoods. Sewage overflows are a major cause of pollution in White River, Fall Creek, Pleasant Run, Pogues Run and Eagle Creek. Raw sewage steals oxygen from the water, making it difficult for fish to breathe and sometimes causing fish kills. High bacteria levels make streams unsafe for children to wade or play in the water. Raw sewage in our streams also prevents us from becoming a world-class city that can attract new businesses, jobs and residents.



White River East Bank Storage Tank

A 3-million gallon underground storage tank was installed this year along the White River near the Indiana University-Purdue University Indianapolis campus. The tank will capture and store a combination of raw sewage and stormwater that would otherwise overflow into the river during storms. It will hold the wastewater until flows in the sewer system subside. The tank will control one of the largest sources of raw sewage overflow in the city.



BEFORE



AFTER

Improvements at the Treatment Plants

Early action projects and other improvements at the city's two wastewater treatment plants will reduce plant overflows by millions of gallons each year. Some sewage overflows currently go directly into the White River and Little Buck Creek.

The wet weather upgrades at the Belmont Advanced Wastewater Treatment Plant include two double-lined flow equalization basins and two concrete storage tanks that also provide first-stage treatment. At the Southport Advanced Wastewater Treatment Plant, the city is building a new pump station, new 48-inch force mains to convey flows, and a double-lined equalization basin for storage and later treatment.

In the next few years, the city also will install new wet weather treatment facilities at Belmont and a new pipeline between the plants so Southport can treat more flows when Belmont is overloaded by wet weather.



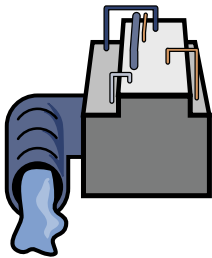
OVERVIEW OF OPTIONS

The city has evaluated a number of technologies and options to further reduce sewage overflows to our streams. The final options are:



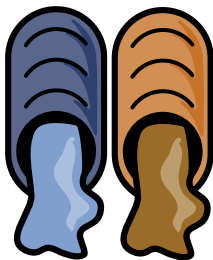
PLAN 1: STORAGE AND CONVEYANCE

Plan 1 would involve a single deep tunnel, underground storage tanks and new sewers to capture raw sewage that would otherwise overflow into our streams. The tunnels and tanks would store the sewage underground until after a storm, when the captured sewage would be pumped to the city's treatment plants. The treatment plants also would be expanded. Total costs range from \$1.44 billion to \$3.02 billion, depending on the size of the facilities.



PLAN 2: STORAGE AND REMOTE TREATMENT

Plan 2 would involve three deep tunnels, as well as underground storage tanks and new sewers to capture raw sewage that would otherwise overflow into our streams. It also would include remote treatment facilities at the downstream end of Pogues Run and Fall Creek tunnels. These treatment facilities would treat wet-weather flows that exceed the tunnels' capacity. The city's central treatment plants also would be expanded. Total costs range from \$1.55 billion to \$3.03 billion, depending on the size of the facilities.



PLAN 3: TOTAL SEWER SEPARATION

Plan 3 would involve completely separating combined sewers in all areas to eliminate raw sewage overflows. Existing combined sewers would be converted to either a separate sanitary sewer or a separate storm sewer. New sewers would need to be installed in all neighborhoods, and all homes and businesses would be re-connected to the separated sewers. The city's treatment plants would not be expanded under this plan. Total sewer separation is the most costly option, estimated at \$6.2 billion.

OTHER WATERSHED IMPROVEMENTS

A watershed is an area of land that drains into a river or stream. The city is looking at all the sources of pollution in its watersheds to identify the best plan for improving water quality. Under all three plans, the city also would implement the following programs:

- Building sewers for neighborhoods now served by septic systems
- Implementing projects to reduce flooding and improve stormwater drainage
- Restoring streambanks and removing polluted sediments from streams
- Disconnecting downspouts, sump pumps and other illicit connections that take up sewer capacity

If Plan 1 or 2 are chosen, these additional improvements would be added:

- Adding water to tributaries to improve stream flow and wildlife habitat
- Improving oxygen levels in streams by adding aeration on Fall Creek and White River, removing Boulevard Dam on Fall Creek and modifying Stout Dam on White River

The cost of these additional programs is estimated at \$64.72 million (included in cost estimates above).

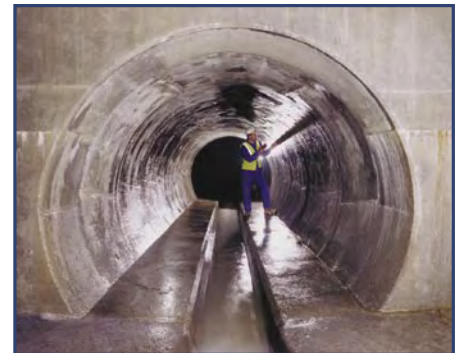
PLAN 1: STORAGE AND CONVEYANCE

The key features of Plan 1 are:

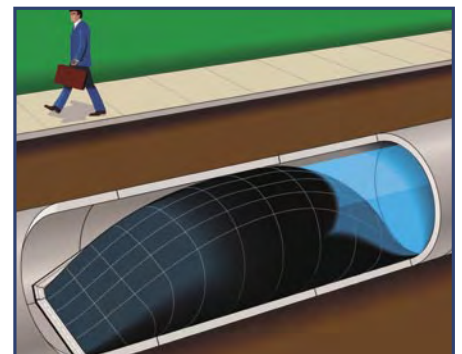
- A single central tunnel system along Fall Creek and White River, to store and carry sewage to the city's wastewater treatment plants. The tunnel would be built several hundred feet below the ground surface with tunnel boring machines. Tunnels can provide a large storage volume with very little disturbance to the ground surface, making them a preferred option in urban areas. Sewage storage tunnels have been built in Chicago, Milwaukee, Toledo and other cities.
- New, larger sewers along Pogues Run, Pleasant Run, Bean Creek and parts of Fall Creek and White River to capture overflows and carry them to the central tunnel system. Most sewers would be installed by digging open trenches, with limited sections installed by small-scale tunneling.
- A new sewer along Eagle Creek to carry wet weather flows to the Belmont Advanced Wastewater Treatment Plant.
- An underground storage tank near Spades Park to capture and store overflows from upper Pogues Run. The stored sewage would be pumped to the city's treatment plants after a storm. The storage tank would be self-cleaning.
- Upgrading an existing storage/treatment facility at Riviera Club to capture, store and treat overflows from upper White River.
- An underground storage tank now under construction on the White River near the campus of Indiana University-Purdue University at Indianapolis. Stored sewage would be pumped to the treatment plants after a storm, and the tank would have an automatic self-cleaning system.
- Inflatable dams and pinch valves at key points in the sewer system. These devices help save money by using existing sewer lines to contain and reduce raw sewage overflows. Eventually, electronic sensors would send data to a centralized computer, allowing remote and real-time control of flows within the sewer system.
- Local sewer separation projects to eliminate isolated overflows on State Ditch, Lick Creek and the upstream ends of Fall Creek, Pogues Run and Bean Creek.
- Improvements to both Belmont and Southport Advanced Wastewater Treatment Plants to increase their ability to store and treat peak flows during wet weather. Improvements would include a new sewer pipe connecting the two plants.
- Watershed improvements described on page 4.

Plan 1 costs

The key factor in determining cost is facility size. The larger you build a tunnel, storage tank, or other facility, the more it will capture and the more it will cost. The city's options under Plan 1 could increase sewage capture from today's 63 percent annual average to 90, 93, 95, 97 or 99 percent. Design, construction and 20 years of operating costs for Plan 1 range from \$1.443 billion for 90 percent capture to \$3.026 billion for 99 percent capture.

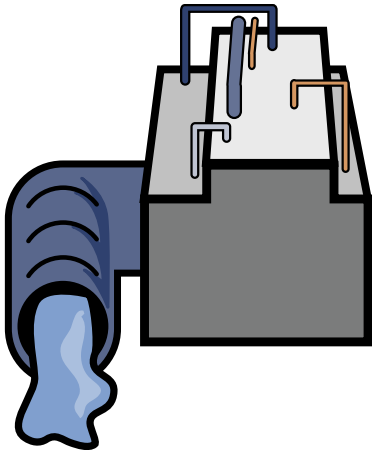


Storage tunnel



Inflatable dam

PLAN 2: STORAGE AND REMOTE TREATMENT



Plan 2 is similar to Plan 1 in many respects. The key differences are three separate tunnels and the use of high-rate treatment facilities along Fall Creek and Pogues Run to treat sewage captured by deep tunnels, rather than send it to the city's existing treatment plants.

The key features of Plan 2 are:

- Two separate deep tunnel systems and treatment facilities – one for Fall Creek and one for Pogues Run. The treatment facilities would be located at the downstream end of both waterways, where they converge with the White River. These facilities would use the latest technologies to treat sewage stored in the tunnels, discharging treated flows into the streams after disinfection with ultraviolet lights. These treatment units would be relatively small and could start up quickly to treat storm flows. However, they would not be as effective as the city's advanced wastewater treatment plants in removing pollutants, and they would require more maintenance than a storage tank or tunnel.
- A third separate tunnel system for White River watershed with a pumping facility to direct stored sewage to the city's central treatment plants.
- New sewers for isolated outfalls along Fall Creek, Pogues Run and White River to carry wet weather flows into each tunnel system.

The remaining features of Plan 2 are identical to Plan 1:

- New, larger sewers along Eagle Creek, Pleasant Run and Bean Creek.
- An underground storage tank for upper Pogues Run near Spades Park.
- Upgrading an existing storage/treatment facility for upper White River at Riviera Club.
- An underground storage tank now under construction on the White River near the IUPUI campus.
- Inflatable dams and pinch valves at key points in the sewer system.
- Local sewer separation projects to eliminate isolated overflows on State Ditch, Lick Creek and the upstream ends of Fall Creek, Pogues Run and Bean Creek.
- Improvements to both Belmont and Southport Advanced Wastewater Treatment Plants, including a new sewer pipe connecting the two plants.
- Watershed improvements described on page 4.

Plan 2 costs

As with Plan 1, the key factor in determining cost is facility size. Building and operating the remote treatment facilities makes Plan 2 somewhat more expensive than Plan 1. Design, construction and 20 years of operating costs for Plan 2 range from \$1.545 billion for 90 percent capture to \$3.032 billion for 99 percent capture.



Remote treatment unit



Remote treatment



PLAN 3: TOTAL SEWER SEPARATION

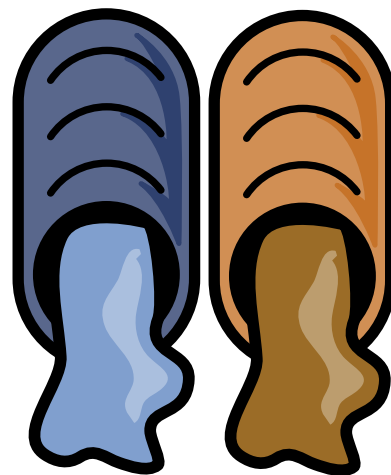
Plan 3 includes total separation of existing combined sewers in all watersheds to eliminate all combined sewer outfalls. Total sewer separation is the most costly option and would also be the most disruptive to neighborhoods during construction, especially downtown and in Center Township. Sewer separation would lead to increased pollution from urban stormwater, a significant source of water quality problems in Marion County.

The key features of Plan 3 are:

- Total sewer separation in all watersheds, including Fall Creek, Pogues Run, Pleasant Run, Eagle Creek, State Ditch and White River. The existing combined sewers would be converted to either a separate sanitary sewer or a separate storm sewer.
- Stormwater flows would be conveyed to ponds, sand filters or other stormwater management practices, prior to discharge into streams. These technologies would help reduce (but not eliminate) the many pollutants found in urban stormwater, such as sediments, organic matter, metals, oils, and trash.
- Improvements to the Belmont and Southport treatment facilities would not be needed, nor would the new pipe connecting the two plants.
- Watershed improvements described on page 4.

Plan 3 costs

The cost of sewer separation was estimated based upon the total acreage that would need to be separated. With 35,405 acres draining into the combined sewer area, the city estimates the total cost of sewer separation at \$6.201 billion.



Sewer separation under construction



Sewer separation under construction



NEIGHBORHOOD IMPACTS




Like any construction project, all the plans will affect our neighborhoods. Some will have greater impact during construction, while others might have more of an effect during long-term operation. The Mayor's Raw Sewage Overflow Advisory Committee and the Wet Weather Technical Advisory Committee—made up of neighborhood representatives, health officials, environmental advocates and technical representatives—evaluated how the three plans would impact neighborhoods.

Here's a sample of some of the questions committee members asked when they considered how the plans would affect neighborhoods:



- **NOISE:** How much and when will noise occur during construction? How much noise will be present in the long-term, from pumps and blowers, etc.?
- **ODOR:** Are odors expected to be increased during the long-term operation?
- **SAFETY AND SECURITY:** Are there public safety issues associated with the alternative, such as use of chemicals for treatment, creation of mosquito or fly habitat? Are there security issues, such as potential for vandalism, terrorism, sabotage, etc.?
- **SITING CONCERNS:** How close are facilities to homes, parks and schools? How difficult would it be to site these facilities?
- **AESTHETICS:** How long will the facilities have a visual impact on the existing landscape? Can the alternative be seen from a home or public gathering place, such as a park?
- **TRUCK TRAFFIC DURING OPERATION:** How frequently will trucks travel through a neighborhood for regular operation and maintenance activities?
- **NEIGHBORHOOD DISRUPTION DURING CONSTRUCTION:** How much disruption will be caused to streets, sidewalks, parks, yards, etc. during construction? How long will the disruption last?

Committee members and city staff reviewed these questions and then ranked the proposed plans 1st, 2nd or 3rd, based on their judgment. They concluded that Plan 1 is the best option for neighborhood issues, followed by Plan 3, and Plan 2. The final results are in the graphic below.

	 PLAN 1	 PLAN 2	 PLAN 3
NOISE	1st	3rd	1st
ODOR	2nd	3rd	1st
SAFETY AND SECURITY	1st	3rd	1st
SITING CONCERNS	1st	2nd	2nd
AESTHETICS	1st	3rd	2nd
TRUCK TRAFFIC DURING OPERATION	1st	3rd	2nd
NEIGHBORHOOD DISRUPTION DURING CONSTRUCTION	1st	2nd	3rd
THE COMMITTEE'S OVERALL RANKING OF NEIGHBORHOOD ISSUES	1st	3rd	2nd



***Please answer Question 1 on the Clean Stream Decision-Making Card.**



IMPACT ON SEWER RATES

One key factor in selecting a plan is determining its impact on ratepayers. Our sewer rates, which are among the lowest in the nation, will need to rise in order to pay for these projects. However, the city will work hard to keep construction costs down and obtain state and federal grants to reduce the burden on our ratepayers.

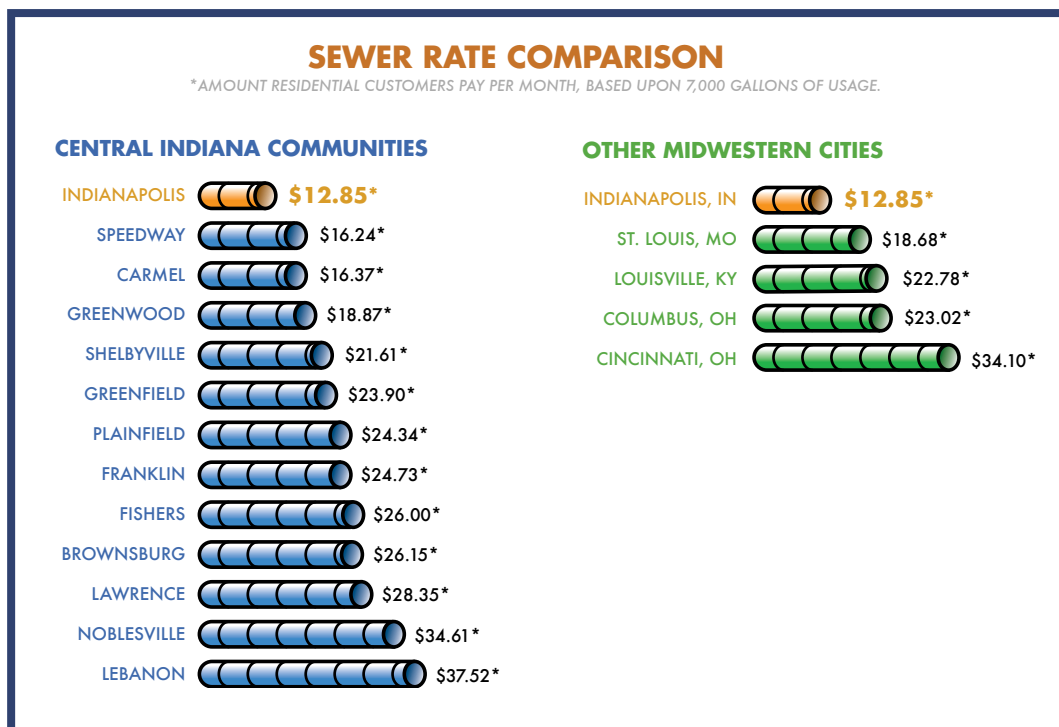
The city is concerned in particular about rate impacts on Center Township, where the city's most disadvantaged residents live. Forty-three percent of households in Center Township are considered "low income," as defined by the federal government – that is, they have less than 50 percent of the area median family income. For Marion County as a whole, 25 percent of households fit that description.

While long-term sewer rates are difficult to predict, the city has estimated the additional monthly cost to ratepayers for sewage overflow control at the end of 20 years. Rates will rise gradually during that time to provide funding necessary to repay bonds and loans used to finance the projects, as well as operate and maintain the new facilities.

Estimated impact on rates for the different options are shown in the comparison table on page 10. These rates only represent increases associated with controlling combined sewer overflows. Other rate increases will likely be needed to keep our sanitary sewers and treatment plants in good condition.



HOW DO OUR RATES COMPARE WITH OTHER CITIES?

Indianapolis sewer rates are low in comparison to other cities of our size and other cities in Indiana. Indianapolis residential customers pay \$12.85 per month, based upon 7,000 gallons of usage. According to a rate survey conducted by the accounting firm Crowe Chizek in 2004, comparable rates in other cities for the same usage were:



MAKING THE COMPARISON

How do we decide what plan is best? In addition to looking at neighborhood issues, we can compare the plans based upon how well they reduce overflows, protect human health, protect wildlife, or manage costs. A side-by-side comparison of the various options is presented in the table below.

	REDUCING OVERFLOWS			PROTECTING HUMAN HEALTH		IMPROVING WILDLIFE HEALTH	MANAGING COSTS		
	AVERAGE % OF FLOW CAPTURED AND TREATED ANNUALLY	AVERAGE # OF UNTREATED OVERFLOWS PER YEAR	ADDITIONAL GALLONS OF SEWAGE CAPTURED/TREATED PER YEAR	DAYS WATERWAYS ARE SAFE FOR SWIMMING (<235 E. COLI COLONIES/100 ml)	DAYS WATERWAYS HAVE VERY HIGH BACTERIA LEVELS (> 10,000)	AQUATIC AND WILDLIFE BENEFITS	TOTAL COST (CONSTRUCTION + OPERATIONS FOR 20 YEARS)	TOTAL COST PER GALLON OF OVERFLOW CAPTURED	AVERAGE HOMEOWNER'S MONTHLY SEWER RATES (AT END OF 20 YEARS)*
CURRENT CONDITIONS	63%	60	-	187 days	52 days	3RD	\$0	-	\$12.85
 PLAN 1	90%	12	6.33 billion	230 days	12 days	1ST	\$1.44 billion	22.8 cents	\$44.00
	93%	6	6.86 billion	230 days	6 days		\$1.61 billion	23.5 cents	\$47.00
	95%	4	7.12 billion	230 days	4 days		\$1.73 billion	24.3 cents	\$49.00
	97%	2	7.46 billion	230 days	2 days		\$2.21 billion	29.6 cents	\$58.00
	99%	0.5	7.73 billion	231 days	0.5 days		\$3.03 billion	39.2 cents	\$73.00
 PLAN 2	90%	12	6.35 billion	230 days	12 days	2ND	\$1.55 billion	24.4 cents	\$46.00
	94%	6	6.93 billion	230 days	6 days		\$1.72 billion	24.8 cents	\$49.00
	95%	4	7.16 billion	230 days	4 days		\$1.86 billion	26.0 cents	\$51.00
	98%	2	7.49 billion	230 days	2 days		\$2.23 billion	29.8 cents	\$58.00
	99%	0.5	7.73 billion	231 days	0.5 days		\$3.03 billion	39.2 cents	\$73.00
 PLAN 3	100%	0	7.87 billion	228 days	0 days	2ND	\$6.2 billion	78.8 cents	\$132.00

***Monthly sewer rate estimates include today's rates plus the amount needed to fund sewage overflow projects. Other rate increases will likely be needed in future years to keep the rest of our system in good condition.**

Reducing Overflows: Currently, sewers overflow about 60 times per year, spilling 7.87 billion gallons of untreated sewage into our waterways. The table shows how each plan will reduce the number of overflows each year and how many gallons will still overflow. After the plan is implemented, overflows would only happen during the biggest storms, or in back-to-back smaller storms. We will be capturing a greater percentage of sewage, up from 63 percent today to 90 percent or more under the various options.

Protecting Human Health: Will our waterways be safe for swimming? That goal is not achievable at all times. However, we will improve the number of days our waterways meet the state's swimming standards from 187 per year today to around 230 per year in the future. We will also reduce the number of days our streams have very high *E. coli* bacteria levels (greater than 10,000 colonies in a 100 milliliter sample). A city ordinance prohibits swimming in these streams. Even though water quality will improve under the city's plans, you should protect yourself and your family by staying out of urban waterways.

Improving Wildlife Health: Wildlife are already returning to city streams due to the investments the city has made in recent years. Each option will lead to additional improvements. Plan 1 ranks first for improving wildlife health. Plans 2 and 3 provide about equal benefits.

Managing Costs: The chart compares the plans based upon total cost, cost per gallon captured, and the impact on monthly sewer rates. Total costs include the cost of design, construction and operation over 20 years. The cost-per-gallon column shows that costs are similar for 90, 93 and 95 percent capture, but get more expensive when you have to build facilities big enough to capture the biggest storms. The monthly sewer rate is estimated based upon funds and financing needed for sewer overflow projects only.

***Please answer Question 2 on the Clean Stream Decision-Making Card.**



PRIORITY AREAS

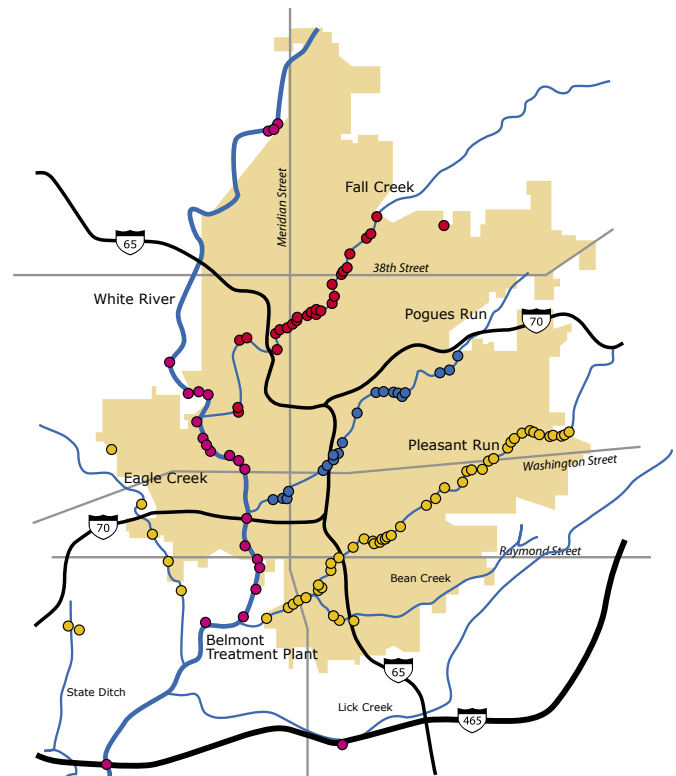
The city has conducted surveys to determine how people use our streams. These surveys show that our streams and greenways are used for a variety of activities, with the most popular being walking, jogging, bicycling, and playing by the streambank. Less frequent activities include fishing, wading and swimming.

Recreational activities are reported both along smaller, neighborhood streams, and the White River. However, there are no swimming beaches along waterways affected by sewage. The city has concluded that while each waterway is important to people who live along and use it, no one waterway or area is more important than another to the entire city.

ARE SMALLER STREAMS A HIGHER PRIORITY?

In implementing the plan, the city could spend more resources and place higher standards on some streams than others. What is your preference?

- *All streams should be treated the same.* The city should have the same goal for reducing overflows on all streams.
- *Smaller streams should be a higher priority than White River.* Smaller, neighborhood streams should be a higher priority because water quality impacts are more severe there. Also, reducing overflows on these streams will improve White River, because the smaller streams flow into White River.
- *Some small streams should receive higher protection than other small streams.* You may prefer a higher control on Fall Creek vs. Pleasant Run or Eagle Creek vs. Pogues Run. If so, please explain your reasoning.
- *Some streams may receive a higher level of control because it is cost-effective to do so.*



Location of sewage overflows in Indianapolis

HOW MUCH CONTROL MAY BE REQUIRED?

Because sewer overflow costs and impacts vary in each community, regulatory agencies may require more or less control in different communities or on different waterways. Some U.S. waterways have been allowed an average of 6 overflows per year, others 4, and others 2 or fewer. During negotiations, the U.S. Environmental Protection Agency has suggested we should evaluate additional levels of control, including different levels of control on the White River and the smaller streams. An example would be that we achieve an average of 3 overflows per year for White River, Pleasant Run and Eagle Creek, and 2 per year for Fall Creek and Pogues Run.

Here is how this particular option would compare with the options shown on page 10.

AVERAGE % OF FLOW CAPTURED AND TREATED ANNUALLY	AVERAGE # OF UNTREATED OVERFLOWS PER YEAR	ADDITIONAL GALLONS OF SEWAGE CAPTURED /TREATED PER YEAR	DAYS WATERWAYS ARE SAFE FOR SWIMMING (<235 E. COLI COLONIES/100 ML)	DAYS WATERWAYS HAVE VERY HIGH BACTERIA LEVELS (> 10,000 COLONIES/100 ML)	AQUATIC AND WILDLIFE BENEFITS	TOTAL COST (CONSTRUCTION + OPERATIONS FOR 20 YEARS)	TOTAL COST PER GALLON OF OVERFLOW CAPTURED	AVERAGE HOMEOWNER'S MONTHLY SEWER RATES (AT END OF 20 YEARS)
96%	3 OR 2	7.37 billion	230 days	3 OR 2 days	1ST	\$2.05 BILLION	27.8 CENTS	\$53-54

The city hasn't selected a level of control because we need your input first. What are your thoughts?

***Please answer Questions 3, 4 and 5 on the Clean Stream Decision-Making Card.**

WHAT YOU CAN DO

It took decades for our streams to get into this condition, and it will take years of hard work and investment to improve them. In the meantime, there are measures you can take to help protect the environment and yourself and your family.

PROTECT THE ENVIRONMENT

- Disconnect downspouts and sump pumps connected to sewers. This will prevent clear water from using up our sewers' capacity.
- Don't send fats, oils or grease down the drain. They cause sewer blockages and backups.
- Properly dispose of motor oil, antifreeze, battery acid and household chemicals. Call 327-4TOX to learn how.
- Clear gutters and storm sewer drains of leaves and debris.
- Reduce water use in your home and business.
- Clean up after your pets. Their waste contaminates our waterways.

PROTECT YOURSELF AND YOUR FAMILY

- Pay attention to warning signs posted by the Indianapolis Department of Public Works and the Marion County Health Department.
- Call the Sewer Overflow Hotline at 327-1643 to receive notification of sewage overflows.
- Sign up for sewage overflow e-mail alerts at www.indycleanstreams.org.

THE PROCESS

The City of Indianapolis has been working for years on its long-term control plan for the Indianapolis sewer system. The plan must be submitted to the U.S Environmental Protection Agency and the Indiana Department of Environmental Management. The following is a tentative schedule:

SCHEDULE

• Oct. 14-26	Public meetings
• November	Determine preferred plan
• December - January	Produce draft of long-term control report
• February	30-day public comment period
• Mid-February	Hold public hearing
• March	Incorporate changes from public comments
• Late March	Produce final report
• April	Send to EPA and IDEM for review and approval

INDIANAPOLIS CLEAN STREAM TEAM

151 N. Delaware St., Suite 900
Indianapolis, IN 46204

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

INSIDE: YOUR CHANCE TO COMMENT ON OPTIONS FOR CONTROLLING SEWAGE OVERFLOWS.



made with recycled paper

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

Winter 2005 | Issue 5

Inside This Issue

- 2 From the Director...
- 2 BRIEFS
- 3 New Tank Reduces Overflows
- 3 Scholarship Campaign Launched
- 4 Do You Have a Correct Connect?

Statement Of Purpose

The Indianapolis Clean Stream Team is overseeing many projects to keep raw sewage out of our waterways and improve the quality of life in our neighborhoods. Stream Line is published quarterly to keep you informed about the city's progress in reducing raw sewage overflows and restoring the health of our streams.

Contact Info

Send letters to:

Indianapolis Clean Stream Team
Attn: Jodi Perras
151 N. Delaware St.
Suite 900
Indianapolis, IN 46204

Tel: 317-327-8720
Fax: 317-327-8699
Email: jperras@indygov.org



**Sewer Overflow
Hotline:
327-1643**

CITIZENS WEIGH IN ON SEWAGE CONTROL OPTIONS

Most popular choice is mid-range option of 95 percent capture

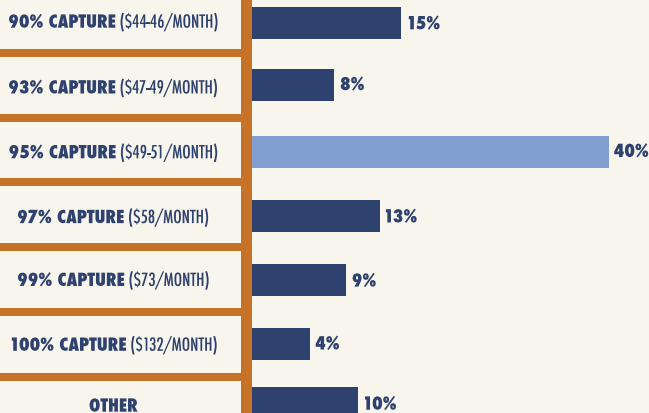
During a series of public meetings in October, the Department of Public Works sought public input on the city's options for reducing raw sewage overflows. The city received 153 responses through public meetings, mail and its Web site.

"We want to thank the citizens for their input, as well as their time and effort, in helping us develop the most effective long-term control plan for reducing raw sewage overflows in our city," said DPW Director Jim Garrard. Partial results are summarized below. For more detailed information and full survey results, visit our Web site at www.indycleanstreams.org.

Cost and Level of Control

The city estimated the impact of overflow control projects on residential sewer rates and asked residents how much they would be willing to pay at the end of 20 years for cleaner waterways. The top vote-getter, with 40 percent of all votes, was 95 percent systemwide capture (costing the average homeowner \$49-51 per month at the end of 20 years). Other results are shown below.

HOW MUCH ARE YOU WILLING TO PAY?



Monthly sewer rates are the average homeowner's estimated rate at the end of 20 years. They include today's rate plus the amount needed to fund sewage overflow reduction projects. Other rate increases will likely be needed for other sewage collection and treatment needs.

Priority Areas

In implementing the plan, the city could spend more resources and place higher standards on some streams than others. When asked about this, the largest number of residents (38 percent) wanted to treat all streams the same. Twenty-seven percent wanted to give smaller streams a higher priority than White River and 22 percent would give some streams higher controls if it is cost-effective to do so.

Preferred Plan

Participants were asked to indicate which systemwide plan they prefer. Fifty-nine percent of participants preferred Plan 1 (Storage/Conveyance), 26 percent chose Plan 2 (Storage/Conveyance with Remote Treatment Facilities), and 15 percent chose Plan 3 (Total Sewer Separation). Negotiations are continuing with state and federal agencies to finalize a plan.

Find us on the Web at: www.indycleanstreams.org

From the Director...

James Garrard
Director of Public Works



Happy New Year to all! In this issue of Stream Line, we are highlighting recent city activities to reduce sewage overflows and improve water quality.

These include:

- Public input on our alternatives for reducing sewer overflows. Since October, city staff and the Clean Stream Team have been talking to groups all over town about our options and getting input on some important policy questions. The results will guide our long-term plan.
- The opening of the 3-million-gallon East Bank Storage Tank, which is reducing millions of gallons of sewage overflows from one of the worst overflow locations along the White River.
- The 2005 debut of our "Correct Connect" program which will educate, encourage and require property owners to disconnect incorrect or illegal sump pump and downspout connections to our sewers.
- A campaign to raise \$103,000 from the community to endow an environmental scholarship for a deserving Indianapolis Public School student who participates in Purdue University's Science Bound program.

Our most important goal this year, however, is completing our long-term control plan for improving water quality and gaining federal and state approval of the plan. Watch our Web site at www.indycleanstreams.org for updates on our progress, a draft plan and opportunities for further public comment.

Thank you for your interest in our waterways!

BRIEFS

USGS Releases Biological Study

The U.S. Geological Survey recently released a biological assessment of White River and other streams in the Indianapolis area. Funded by DPW's Office of Environmental Services, the study provides an assessment of stream health in the White River and select tributaries from 1999-2001. The report describes the abundance and diversity of fish and their food sources at 12 sampling locations. Results are compared to previous studies conducted intermittently from 1981 to 1996.

The study found 74 species and 3 hybrids of fish in the White River and its tributaries in the study area. Carps and minnows were the largest group of fish identified, consisting of more than half of all fish collected. The most numerous species was the central stoneroller, which accounted for almost 25 percent of the fish identified.

Results of the study were affected by the December 1999 discharge of toxic chemicals into the White River at Anderson, Indiana. The discharge killed an estimated 117 tons of fish from Anderson to south of Indianapolis. Biologists began restocking various reaches of the river from April 2000 to November 2001. The direct and indirect effect of the toxic discharge on bottom-dwelling larva, snails and other fish food sources was not clear, USGS reported.

The report is available on the USGS Web site at <http://water.usgs.gov/pubs/wri/wri034331>.



Company Supports Teacher Training

ADS Environmental Services sponsored a recent Team WET



Schools curriculum training hosted by John Marshall Middle School. WET stands for Water Education for Teachers, a water-related curriculum correlated to Indiana state standards. ADS supported the purchase of 10 urban water test kits for participating schools. These kits allow teachers and students to assess the conditions of their drinking water or a local creek. ADS also provided lunch for the participating teachers and trainers. The Clean Stream Team thanks ADS for its support of our educational programs.

New Underground Tank Reduces Overflows to White River

Raw sewage overflows into the White River near downtown reduced dramatically with the October opening of the East Bank Storage Tank.

The 3-million-gallon, underground tank lies adjacent the campus of Indiana University-Purdue University at Indianapolis and along White River State Park. From July to December 2001, 29 overflows were reported at this location. With the tank in place, just five would have occurred during that period.

"From the day he took office, Mayor Peterson has made it a priority to solve this problem," Deputy Mayor Carolyn Coleman said at the October 12 ribbon-cutting ceremony. "This project is a prime example of what we are doing to reduce overflows and become a world-class city."

The \$5.8 million project is included in the city's long-term plan to reduce sewage overflows and restore Indianapolis streams. The tank captures and stores a combination of raw sewage and stormwater that would otherwise overflow into the river during rainfall or snowmelt.

The East Bank Storage Tank holds wastewater until flows in the sewer system subside; then the sewage is pumped back into the existing sewer for transport to the Belmont Advanced Wastewater Treatment Plant. Flushing gates clean out the storage tank after each use.

The underground tank blends into the stream bank and is not noticeable to people enjoying White River State Park. The project was designed by Donohue & Associates, Inc. and inspected by Malcolm-Pirnie, Inc. The construction was managed by Thieneman Construction, Inc.



Donohue & Associates Vice President Stephen Brinegar (left), Deputy Mayor Carolyn Coleman, DPW Director James Garrard and Donohue & Associates Vice President Jim Miller celebrated the opening of the East Bank Storage Tank. Donohue & Associates were the project designers.

SCIENCE Bound



Science Bound students Emma Carmichael (left) and Tasha Ricks teamed on a robotics project at the Women in Engineering Summer camp.

Scholarship Campaign Launched

The Indianapolis Clean Stream Team has launched a fund-raising campaign to endow an environmental scholarship at Purdue University for a deserving Indianapolis Public Schools student.

The scholarship will be granted through the Purdue-IPS Science Bound program, which makes higher education a reality for low-income students who might not otherwise go to college.

Science Bound was the brainchild of Purdue President Martin Jischke and Purdue alum Bob Bowen of Bowen Engineering.

Students who complete the Science Bound requirements will receive a full-tuition scholarship to study a science-related field at Purdue. Program requirements include maintaining a required GPA, participating in after-school programming, and attending summer programs and weekend trips to Purdue.

Today, there are more than 150 students between 8th and 10th grade in Science Bound.

"When today's 10th graders graduate, one of them will be rewarded with a Clean Stream Team scholarship to attend Purdue," said DPW director Jim Garrard. "We are excited about the opportunity to draw new talent into the environmental science and engineering field."

The Clean Stream Team plans to raise \$103,000 during the next three years to establish an endowment. Various levels of tax-deductible giving are available. If you are interested in making a donation, contact Jodi Perras at 327-8720 for more information.

DO YOU HAVE A CORRECT CONNECT?

The Department of Public Works is launching a new "Correct Connect" program to support its goal of reducing sewage overflows into our rivers and streams.

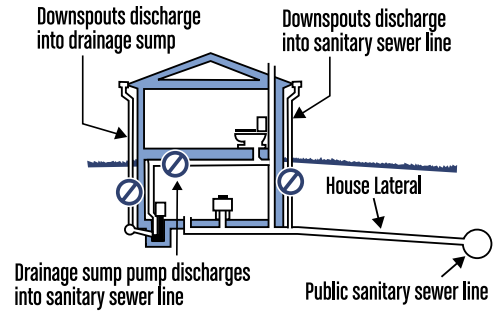


Many homes in Marion County have sump pumps or downspouts illegally or incorrectly connected to the sewer system. If your downspout or sump pump is directly connected to the sewer, it is taking up space needed to carry sewage to our treatment plants.

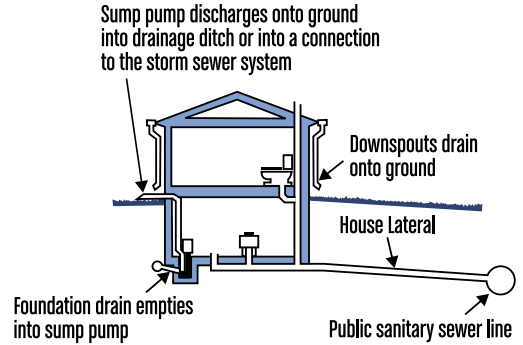
"The goal of Correct Connect is to reduce rainwater flowing into our sewers," said DPW Director Jim Garrard. "This 'clear water' can contribute to sewage overflows into our streams and – even worse – sewage backups into people's basements."

"In a neighborhood of 200 homes it only takes six to eight sump pumps working full time in wet weather to cause a backup in a sanitary sewer – causing problems for an entire neighborhood," said Carlton Ray, DPW's administrator for environmental engineering.

The Correct Connect program will educate residents on how to identify and correct any illegal or incorrect sewer connections. The program will include an instructional video, how-to materials, and assistance from city staff and partner organizations.



IMPROPER INSTALLATION



PROPER INSTALLATION

For more information on Correct Connect, visit our Web site at www.indycleanstreams.org or call the Mayor's Action Center at 327-4622.

INDIANAPOLIS
CLEAN STREAM TEAM

151 N. Delaware St., Suite 900
Indianapolis, IN 46204

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program



made with recycled paper

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

Spring 2005 | Issue 6

Inside This Issue

- 2 River Group Recognized
- 2 From the Director
- 4 Fats, Oils and Grease Clog Sewers

Statement Of Purpose

The Indianapolis Clean Stream Team is overseeing many projects to keep raw sewage out of our waterways and improve the quality of life in our neighborhoods. Stream Line is published quarterly to keep you informed about the city's progress in reducing raw sewage overflows and restoring the health of our streams.

Contact Info

Send letters to:

Indianapolis Clean Stream Team
Attn: Jodi Perras
151 N. Delaware St.
Suite 900
Indianapolis, IN 46204

Tel: 317-327-8720

Fax: 317-327-8699

Email: jperras@indygov.org



**Sewer Overflow
Hotline:
327-1643**

CONSTRUCTION BEGINS TO REDUCE OVERFLOWS TO POGUES RUN

The city will reduce sewage overflows near four local schools through a sewer and tunneling project now under construction on the city's eastside.

Pogues Run was selected for the city's first tunneling project to reduce sewer overflows because of its proximity to Arsenal Tech High School, Harshman Middle School, Horizon Alternative Middle School and Theodore Potter Elementary.

"Citizens have asked us to prioritize improvements near schools, parks and places where children play," said Mona Salem, deputy director for the Department of Public Works (DPW). "This project was put on our priority list to help protect kids in the area."

"It is always a challenge to make students aware of the potential hazards – especially after a flood event," said Steve Young, chief of facilities management for Indianapolis Public Schools. "You wouldn't necessarily know a hazardous situation had been created."

Focusing on the lower portion of Pogues Run between 10th and New York streets, the project will rehabilitate old brick sewers, dig a new tunnel to capture sewer overflows and redirect those overflows into an existing downtown tunnel – and away from the schools.

Overflows in the area are expected to be reduced from an average of 22-38 in a typical year to four overflows or less, based on average rainfall statistics. Dry years will see fewer overflows; wet years may cause more than four.



Walsh Construction crew members pour concrete to create a wastewater collection structure under East Michigan Street near Pogues Run. Eventually, three sewer pipes will converge into the underground box, which will direct overflows into an underground tunnel and away from area schools and neighborhoods.

DPW Begins 2005 Responding to Rain, Floods

Department of Public Works employees worked around the clock to respond to emergency calls in January, when unusually heavy winter rains caused flooding and sewage overflows throughout the city.

DPW's Flood Command Center distributed more than 10,000 sandbags, erected safety signs and responded to emergency requests. Three DPW township service coordinators were on call 24 hours a day during the storm event to respond to resident concerns.

The National Weather Service reported 6 inches of rain fell on Indianapolis from Jan. 1-6. It rained more during the first week in January than it typically does in January and February combined.

While low-lying areas, such as Ravenswood and Frog Hollow, received the most news media attention, service calls to DPW came from across the city.

"All eight townships reported many incidents of backups, overflows, drainage problems, flooding and other sewer-related issues," said Public Works Director James Garrard. "This wet weather streak

(see "Responding" page 3)

Find us on the Web at: www.indycleanstreams.org



Since late last year, DPW has been working with state and federal regulatory agencies to finalize our long-term plan for controlling sewer overflows. Meanwhile, recent developments in the Indiana General Assembly should lead to more legal certainty for our city and other communities with sewage overflows. Senate Bill 620 has had the support of cities and towns, environmental activists and the business community, because it will help Indiana get more overflow reduction plans approved and implemented.

As we went to print, the bill had passed the House 95-0 and was awaiting the governor's signature. If signed into law, the legislation will still require communities to reduce sewage overflows in a timely manner. It also creates legal tools that lessen the risk of enforcement actions if communities are implementing approved plans as required. This directs local dollars toward projects to solve sewage overflows, and not to unnecessary state and federal fines.

The legislation also creates a new recreational use subcategory in Indiana's water quality standards. This subcategory recognizes that even after a community builds facilities to reduce overflows, some overflows will still occur.

For example, EPA and IDEM have agreed that Indianapolis should build new storage tanks, underground tunnels and larger sewers to store and convey sewage to our central treatment plants. However, we know these facilities cannot capture every storm, making it impossible to make our streams safe for swimming all the time.

For this reason, Indianapolis will ask the state to approve the new recreational use subcategory for those few storms that will cause overflows after our new facilities are in place. Because people are unlikely to be swimming during these large storms, the risk to public health is minimal.

I'd like to thank the legislators, communities and other stakeholders who have worked together on Senate Bill 620 to ensure continued progress in cleaning our waterways.

If you have questions about these issues, please contact the Clean Stream Team at 327-8720 or my office at 327-4000.

BRIEFS

White River Organization Recognized

The Friends of the White River became an honorary member of the Clean Stream Team in April for its efforts to preserve and protect the city's primary waterway.

A non-profit organization formed in 1985, FOWR represents the river's recreational users, nearby residents, and all citizens interested in the preservation of the river as a natural resource.

The Friends organize and participate in many river cleanup and educational events each year. Executive Director Kevin Hardie also serves on DPW's Clean Stream Team Advisory Committee.

"This volunteer organization is an invaluable part of our city and vital to the overall efforts of DPW and its Clean Stream Team," said DPW Director James Garrard.

The Clean Stream Team award recognizes businesses, organizations and residents that exhibit extraordinary effort on behalf of our waterways. To nominate someone for this award, visit our Web site at www.indycleanstreams.org.



DPW Director James Garrard (right) presents Robb Chitwood, president of Friends of the White River, with the Clean Stream Team Award.

Stream Line Available Via E-mail

The quarterly Stream Line newsletter and other updates from the Indianapolis Clean Stream Team are now available via e-mail.

You can sign up at www.indycleanstreams.org to receive an HTML-based version of Stream Line and other e-mail updates on Indianapolis water quality issues. You can also visit the Web site to read past issues of Stream Line.

Be on the lookout for changes at www.indycleanstreams.org. We are updating and expanding the site to include more information on the city's stormwater and septic programs, in addition to information about the city's plans to reduce raw sewage overflows into our streams.



Construction (continued from page 1)

“We are pleased that the city is doing what it’s doing,” Young said. “It certainly will be an improvement over what has existed for a long time.”

Another key part of this \$19.2 million construction project includes the replacement of the old Dorman Street pedestrian bridge and the widening of Pogues Run. According to Bob Zieles, DPW construction manager, these changes will bring the Cottage Home neighborhood out of the 100-year flood zone and allow residents to discontinue their flood insurance.

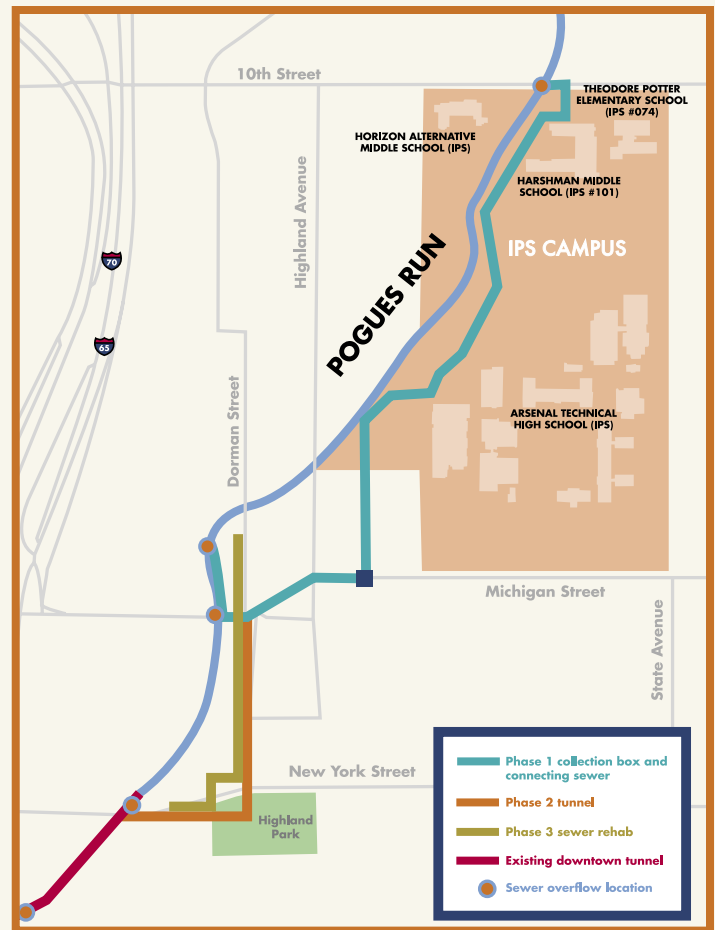
The project started earlier this year when workers began digging under Michigan Street near the Interstate 65-North ramp to build a sewage collection box and a connecting sewer from Michigan Street up to 10th Street to capture sewer overflows. [See map.] This first phase is expected to be complete by the end of 2005.

The second phase, initiated in March, will dig a tunnel connecting the new Michigan Street collection structure to the existing downtown tunnel. State-of-the-art tunneling equipment will be launched from Highland Park, located at New York and Dorman streets.

Phase three will include rehabilitation of brick sewers along Dorman and New York streets. All three phases are scheduled to be complete in August 2006.

Additional improvements will be made later to reduce overflows in the upper portions of Pogues Run under the city’s long-term control plan, now under negotiation with state and federal regulators.

The Pogues Run project team includes design firm Clark Dietz, Inc. and Brierly Associates, inspection firm Christopher B. Burke Engineering Ltd. and contractors Walsh Construction Company, Super Excavators Inc., and Insituform Technologies, USA, Inc.



This 3-phase project will capture sewer overflows and relocate them to an underground tunnel and away from area schools.

Responding (continued from page 1)

is just another reminder of the work that remains ahead of us to upgrade our sanitary and storm sewer systems.”

DPW’s Customer Service center reported nearly three times as many service requests in January 2005 compared with January 2004, as shown in the chart below.

Washington Township was the source of many service calls for sewage overflows, drainage issues, flooding and debris caught in sanitary and storm sewers. Calls made from other townships were mainly about drainage and flooding problems.

DPW SERVICE REQUESTS COMPARISON - JANUARY 2004 VS. JANUARY 2005

PROBLEM	BACKUP	OVERFLOW	DRAINAGE	FLOODING	SURCHARGED	DEBRIS IN STRUCTURE	DITCH DRAINAGE	TOTALS
2004 JANUARY TOTALS	83	0	141	43	16	23	18	324
2005 JANUARY TOTALS	90	48	244	298	103	81	16	880

FATS, OILS AND GREASE CAN CLOG THE CITY'S SEWERS

What do you do with grease and food scraps left after cooking? If you send them down the drain, you could be contributing to sewage backups and overflows.

"When fats, oils and grease are washed down sinks and floor drains, they can build up over time and eventually create clogs," said John Chavez, administrator for the Department of Public Works, Office of Environmental Services. "These clogs can cause sewer backups and prevent the sewers from safely transporting sewage to our treatment plants."

HOW YOU CAN HELP

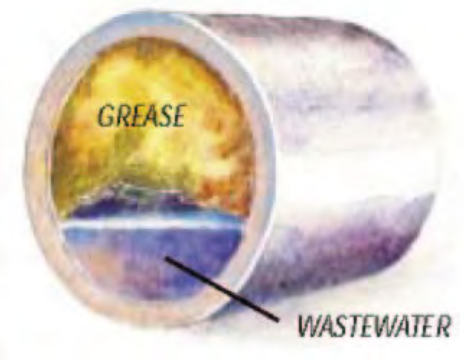
Indianapolis businesses and residents can help by taking these simple steps to reduce the amount of fats, oils and grease in our sewers:

- Wipe pots, pans and dishware with a paper towel before washing to reduce grease discharges into the sewer.
- Dispose of food waste through composting or the trash rather than using garbage disposals.
- Never dispose of leftover cooking oil down the drain.

If you own a restaurant or commercial food establishment, make sure you have a grease interceptor and that it is maintained and operated properly.

Grease-clogged sewers must be cleaned more frequently, increasing the city's sewer maintenance costs at a time when the city budget is already strapped for cash. Sewer overflows and backups also can lead to expensive environmental fines and penalties.

Fats, oils and grease are found in food scraps, meat fats, lard, oil, margarine, butter, baking goods, sauces, and dairy products. Under city ordinances, restaurants, bars, hotels, hospitals, schools and other food service establishments are required to install a grease interceptor to prevent grease from flowing into the sewer system. Grease interceptors must be inspected and cleaned periodically to keep them functioning well. When interceptors are not installed and operated correctly, grease blockages will occur. Using enzymes and other grease-fighting agents usually only moves the clog further downstream, Chavez said. For more information please visit our Web site at www.indycleanstreams.org.



INDIANAPOLIS
CLEAN STREAM TEAM

151 N. Delaware St., Suite 900
Indianapolis, IN 46204

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program



made with recycled paper

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

Fall 2005 | Issue 8

Inside This Issue

- 2 From the Director...
- 2 Briefs
- 6 Tunnel Options
- 7 STEP Program Overview
- 8 Plant Work Complete

Statement Of Purpose

The Indianapolis Clean Stream Team is overseeing many projects to keep raw sewage out of our waterways and improve the quality of life in our neighborhoods. Stream Line is published quarterly to keep you informed about the city's progress in reducing raw sewage overflows and restoring the health of our streams.

Contact Info

Send letters to:

Indianapolis Clean Stream Team
Attn: Jodi Perras
151 N. Delaware St.
Suite 900
Indianapolis, IN 46204

Tel: 317-327-8720
Fax: 317-327-8699
Email: jperras@indygov.org



**Sewer Overflow
Hotline:
327-1643**

MAYOR PROPOSES SWEEPING PLAN TO MAKE INDIANAPOLIS NEIGHBORHOODS CLEANER, HEALTHIER

Plan tackles raw sewage overflows, chronic flooding & failing septic tanks

Rates to increase over three years, but will still be lower than most cities across state, country

Mayor Bart Peterson released plans on Oct. 3 to improve the health and quality of life in neighborhoods throughout Marion County by curbing raw sewage overflows in to rivers and streams, address chronic flooding and addressing the thousands of failing septic tanks in homes across the city.

Neighborhoods across the city will see projects and investments in infrastructure that will:

- Continue the city's long-term plan to reduce the century-old problem of raw sewage overflows into White River, Fall Creek and other neighborhood streams;
- Eliminate the onerous Barrett Law process to convert neighborhoods from septic systems to city sewers;
- Bring sewer service to about 18,000 homes in the next 20 years;
- Address high-priority flood control and drainage issues in neighborhoods throughout the county; and
- Keep up with growing neighborhood needs for sewer capacity and sewage treatment.

"Today marks a major investment in the infrastructure of our community that will make drastic improvements in the quality of life for Indianapolis neighborhoods," Mayor Peterson said. "The problems with raw sewage, chronic flooding and failing septic tanks have plagued our community for decades, and today, we're doing something about it."

Since 2000, the city has invested more than \$200 million to reduce raw sewage overflows and modernize sewage collection and treatment. These improvements have reduced raw sewage overflows by approximately 145 million gallons per year.

"We are doing something about the problem, but we need to do more," Peterson said. "The state and federal governments have made it very clear that we must address these problems. It's better to spend

CLEAN STREAMS HEALTHY NEIGHBORHOODS PROPOSAL

Proposed Sanitary Rate Increase

Sanitary Sewer Fees: The average homeowner using 5,400 gallons of water per month will see his monthly bill of \$9.59 increase to \$12.38 in 2006, \$15.17 in 2007 and \$17.96 in 2008.

Connection Fees: A new \$2,500 sewer connection fee will be charged.

Proposed Stormwater Rate Increase

Proposed Increase: The current bill of \$1.25/month will rise to \$2.25/month per equivalent residential unit.

Proposed Septic Tank Elimination Program

If the City-County Council approves the proposed rate increases, the city will stop using the state's Barrett Law for all new septic conversion projects.

Benefits:

\$435 million over the next three years to reduce raw sewage overflows, bring sewer service to neighborhoods on septic systems and improve flood control and drainage.

(continue "CLEAN STREAMS" on page 3)

Find us on the Web at: www.indycleanstreams.org

From the Director...

James Garrard

Director of Public Works



Hurricane Katrina recently reminded the nation of the importance of building and maintaining our sewage and stormwater infrastructure. This has been a major emphasis in Indianapolis since Mayor Peterson took office in 2001.

We know our streams are polluted and our neighborhoods are unhealthy due to raw sewage overflows, failing septic systems and poor flood control and drainage. Raw sewage spills into our waterways nearly every time it rains. Sewage comes from all over the county to contribute to the problem.

The proposed rate increases will not just address raw sewage overflows in the inner city. They will also help Indianapolis:

- keep up with growing neighborhoods that need sewer capacity and treatment,
- eliminate failing septic systems, and
- improve flood control and drainage in many neighborhoods.

Our sewer infrastructure needs are well-known and documented by the city and the Indianapolis Chamber of Commerce. The city has already invested \$200 million in projects that are reducing overflows by 145 million gallons per year. But we need to do more.

The state and federal governments have made it very clear that we must address these problems or we will face penalties. We believe it's better to keep our money here to solve problems than to pay fines to the state or federal government.

The proposed rate increase will pay for \$435 million in sanitary and stormwater projects over the next three years. Additional rate increases will be needed in future years to continue our program for clean streams and healthy neighborhoods.

It's important to remember that with these increases, our rates will still be affordable when compared to other cities' rates. We hope you will take the time to understand this proposal and give us your support.

BRIEFS

Students Earn Clean Stream Team Award

Students at Harshman Middle School recently received a Clean Stream Team Award for helping educate the community about raw sewage overflows.

The students conducted research, listened to guest speakers from the Clean Stream Team and visited the Pogues Run project site near their school. Compiling all of the information they had learned, the special education class developed a 7-page children's activity book, a PowerPoint presentation, a series of iMovies and a Web site to teach young students and adults alike of the importance of water stewardship.

"With Pogues Run so close to the school, this project allowed the students to make a difference in their community while gaining confidence and practical skills they can use in life," said teacher Laurie Blair, whose class includes 6th, 7th and 8th graders.

DPW Director James Garrard visited the class in May to talk with students about what they learned and to present the Honorary Clean Stream Team Award.

For more information on the class project, please visit the students' Web site at www.bsu.edu/edtec/cilc/blair. The students are looking for assistance in covering the cost of printing their activity book. If you are interested in helping, please contact Deana Haworth at dhaworth@indygov.org.



Students at Harshman Middle School visited the Pogues Run project site near their school during the spring semester to learn more about the project.

Honorary Clean Stream Team Award Nominations Accepted

Do you know somebody who is deserving of honorary membership on the Clean Stream Team? The city is accepting nominations for businesses, organizations and residents throughout Marion County who work on behalf of our waterways.

Honorary membership may be awarded for the following achievements or activities:

1. Environmental leadership over an extended time
2. Voluntary stewardship of our waterways through a one-time or sustained project
3. Partnership with the city on water quality issues or projects

Visit www.indycleanstreams.org to make a nomination. An internal review committee will review the nominations and make recommendations for awards to the DPW director.

CLEAN STREAMS *(continued from page 1)*

our dollars fixing the problems here than to pay fines to Washington or the state government.”

Over the next three years, the plan includes \$400 million in sewage overflow and sanitary sewer/treatment projects and \$35 million in flood control and drainage improvements. These improvements will be financed by increases in sanitary sewer fees, stormwater utility fees and sewer connection fees paid by property owners and developers who connect for the first time to the sewer system.

Sewer projects. More than 100 years ago, Indianapolis built a “combined” sewer system that is still used today. It carries sewage, storm water and industrial waste away from homes, streets and factories in the same set of pipes. To avoid backups into homes, the system sends waste directly into Indianapolis waterways.

When as little as a quarter-inch of rain falls or snow melts, the extra water overloads the sewers, dumping raw sewage, human waste, toilet paper, disease-causing bacteria, such as E. coli, viruses, industrial waste, oil, grease and other pollutants directly into the city’s rivers, streams and creeks.

The new sewer rate will raise the average household user’s sewer bill from \$9.59 a month for 5,400 gallons of water use to \$12.38 a month in 2006, \$15.17 in 2007 and \$17.96 in 2008. If approved, the first increase would appear on water/sewer bills in January 2006.

Stormwater projects. The Mayor also announced he would support a \$1 increase to the current \$1.25 per month stormwater utility fee, raising the fee to \$2.25 per housing unit. If approved, this fee will appear on residents’ property tax bills next spring.

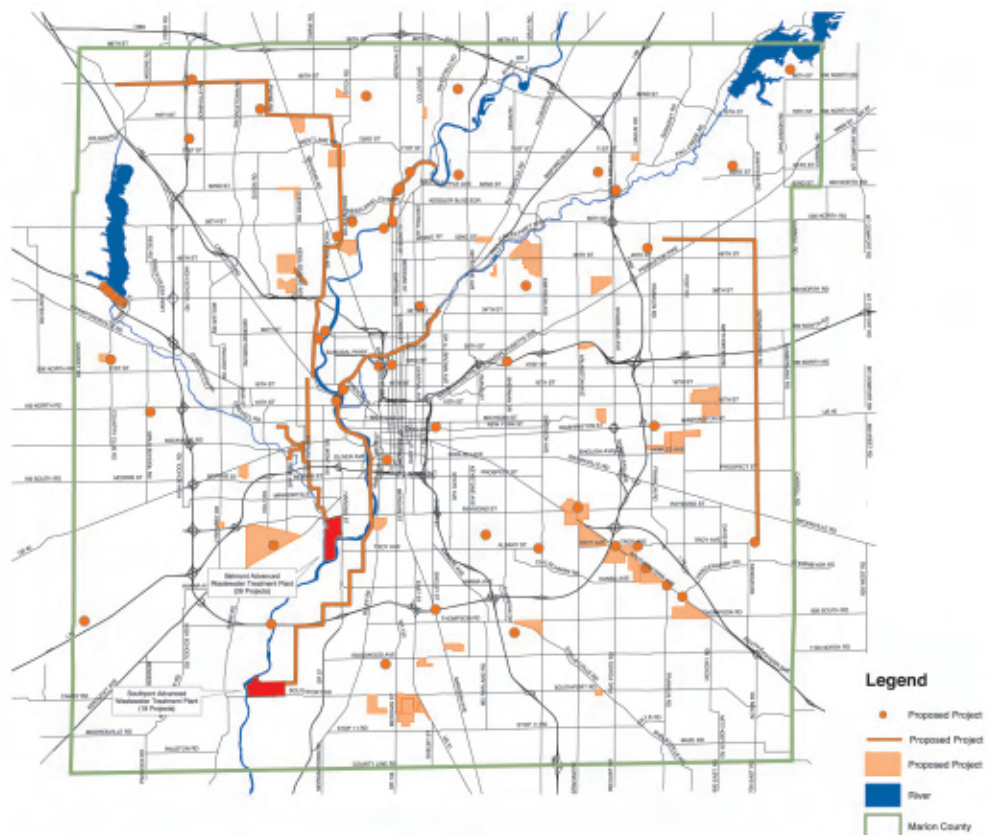
Connecting to city sewers. The city also proposed a new \$2,500 sewer connection fee to be charged for a new house or for a house connecting with city sewers. Multi-family housing will pay \$2,500 per unit; industrial and commercial connections would pay a proportional amount based upon meter size. This fee will require new connections and new developments to help pay into the sewer system that has been built by others before them.

“Although these connection fees are not pleasant, they are common practice in most other communities, including surrounding communities outside Marion County,” said Public Works Director James Garrard. “As our sewer rates rise to comply with regulatory requirements, it is only fair that new connections and new developments help pay into the sewer system that has been built by others before them.”

Eliminating septic tanks. If the City-County Council approves the new rates, the city will stop using the state’s Barrett Law for all new septic conversion projects. Under the new Septic Tank Elimination Program (STEP), the city will bring sewer service to approximately 18,000 homes in the next 20 years. See page 7 for more details on this proposal.

The Mayor announced the plan outside Harshman Middle School, which sits on Pogues Run, one of many neighborhood streams affected by sewer overflows, neighborhood flooding and failing septic systems.

Sanitary and Stormwater Capital Improvement Projects (Proposed 2005-2008 Projected Investments)

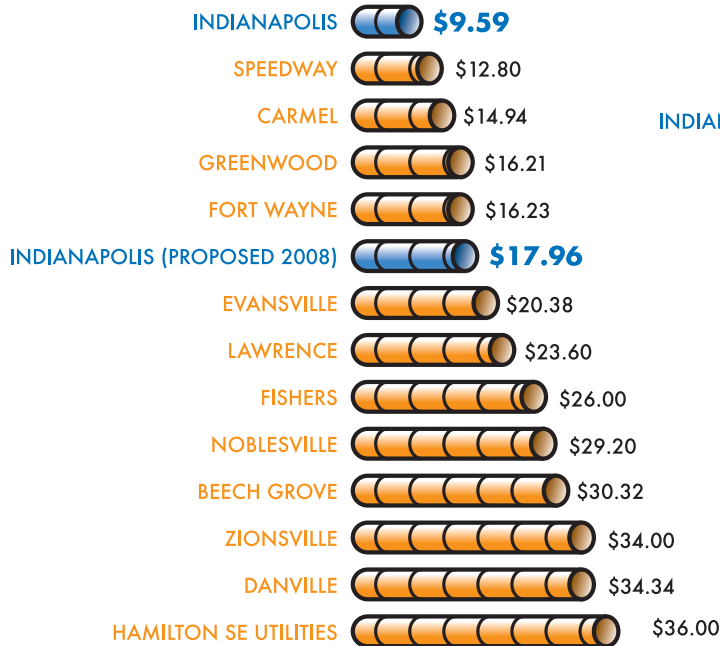


The proposed project list is subject to change based upon changing regulatory requirements, emergencies/natural disasters, available funding, field conditions, and other unanticipated and unavoidable circumstances.

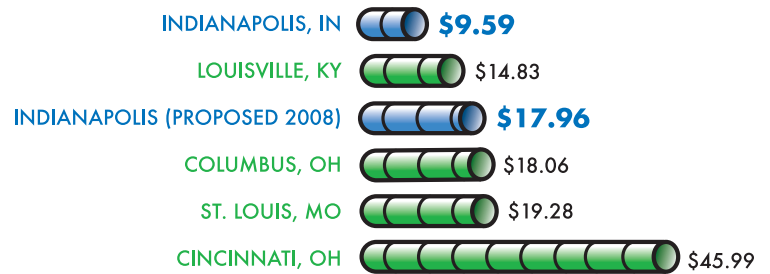
SEWER RATE COMPARISON

AMOUNT RESIDENTIAL CUSTOMERS PAY PER MONTH, BASED UPON 5,400 GALLONS OF USAGE.

INDIANA COMMUNITIES

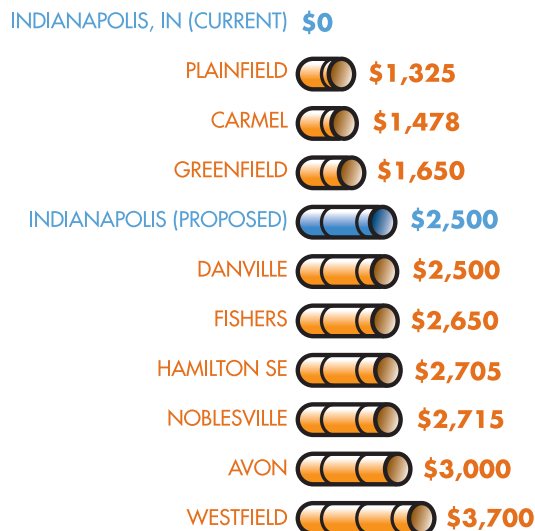


OTHER MIDWESTERN CITIES

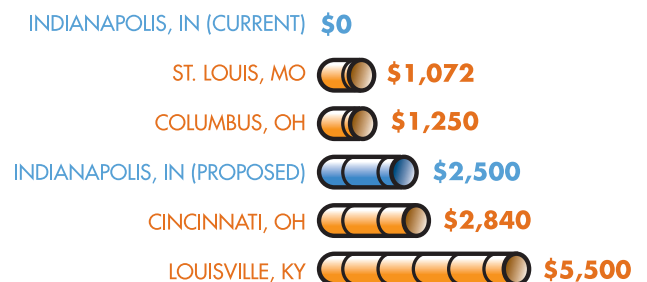


Comparison of Indianapolis to Midwestern Communities New Sewer Availability and Connection Fees for Single Family Units

INDIANA COMMUNITIES

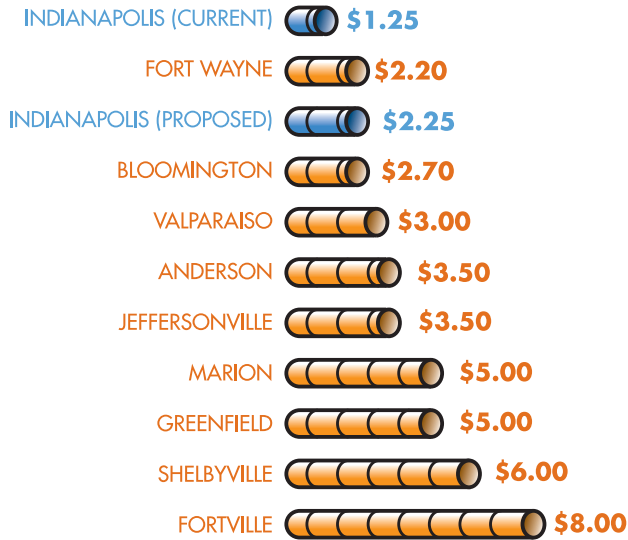


OTHER MIDWESTERN COMMUNITIES

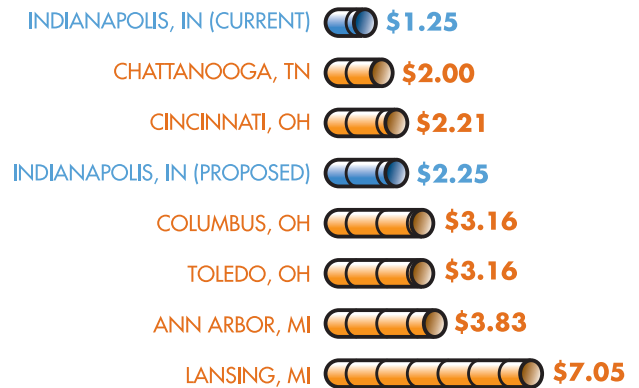


AVERAGE MONTHLY RESIDENTIAL STORMWATER BILL COMPARISON

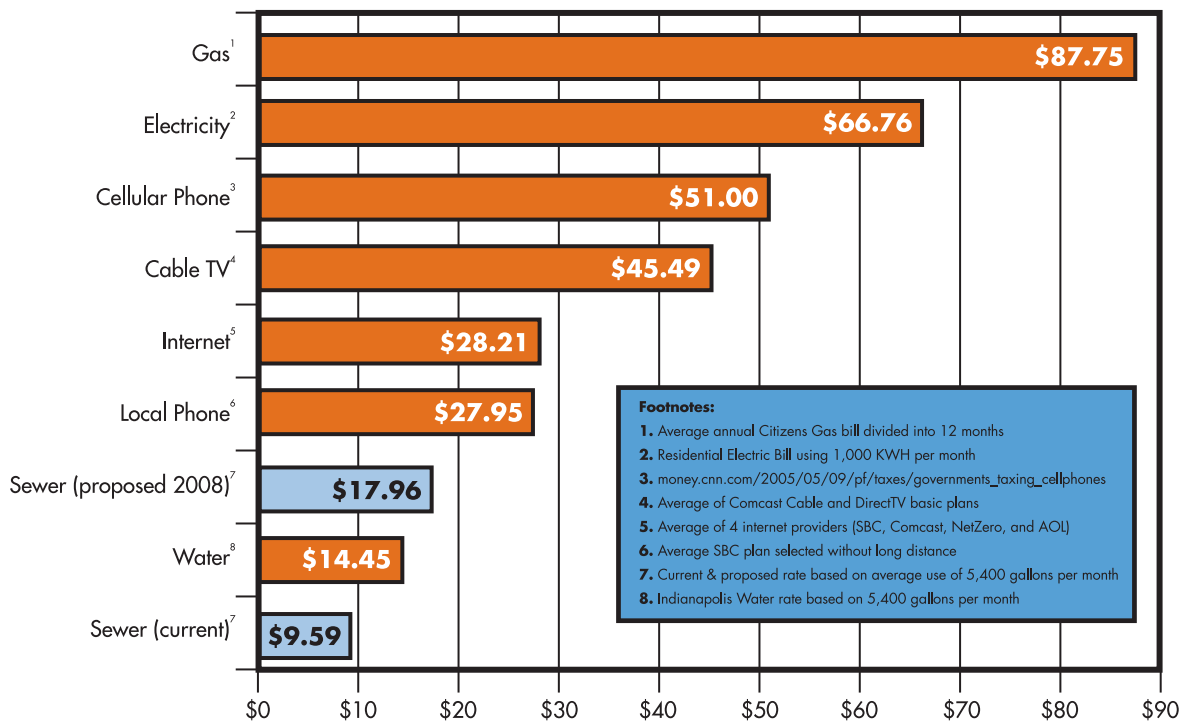
INDIANA COMMUNITIES



OTHER MIDWESTERN COMMUNITIES



Indianapolis Average Residential Sewer Bills vs Other Utilities (City of Indianapolis, August 2005)



CITY STUDIES PRELIMINARY TUNNEL OPTIONS

Final Route Will Be Chosen After More Analysis And Public Input

The city has completed a preliminary study for a deep underground tunnel that will store millions of gallons of sewage that now flows into White River, Fall Creek and other streams when it rains.

The study represents the city's first look at important issues such as groundwater protection, tunnel length and route, and geology – especially in the bedrock where the tunnel will be built.

The Clean Stream Team Advisory Committee received a briefing on the tunnel study at its May 18 meeting.

"This project is in the preliminary stages," said Carlton Ray, environmental engineering administrator for the Department of Public Works. "There will be a lot more in-depth analysis and engineering to identify the final locations, as well as input from the public. This is a long process and an expensive job."

David Egger of Black & Veatch told the committee that underground solutions are becoming more common in cities because there is little or no room above ground for the facilities we need to build.

"Most cities like Indianapolis are beginning to look more and more at deep tunnels as a solution," Mr. Egger said. "Chicago has been working with tunnels since the late 1970s. Milwaukee has used them as well."

Following the results of the geotechnical exploration program and considering other factors, the tunnel is expected to be dug approximately 200-250 feet below ground with a tunnel boring machine. A typical rock tunnel boring machine is shown in the photo on this page.

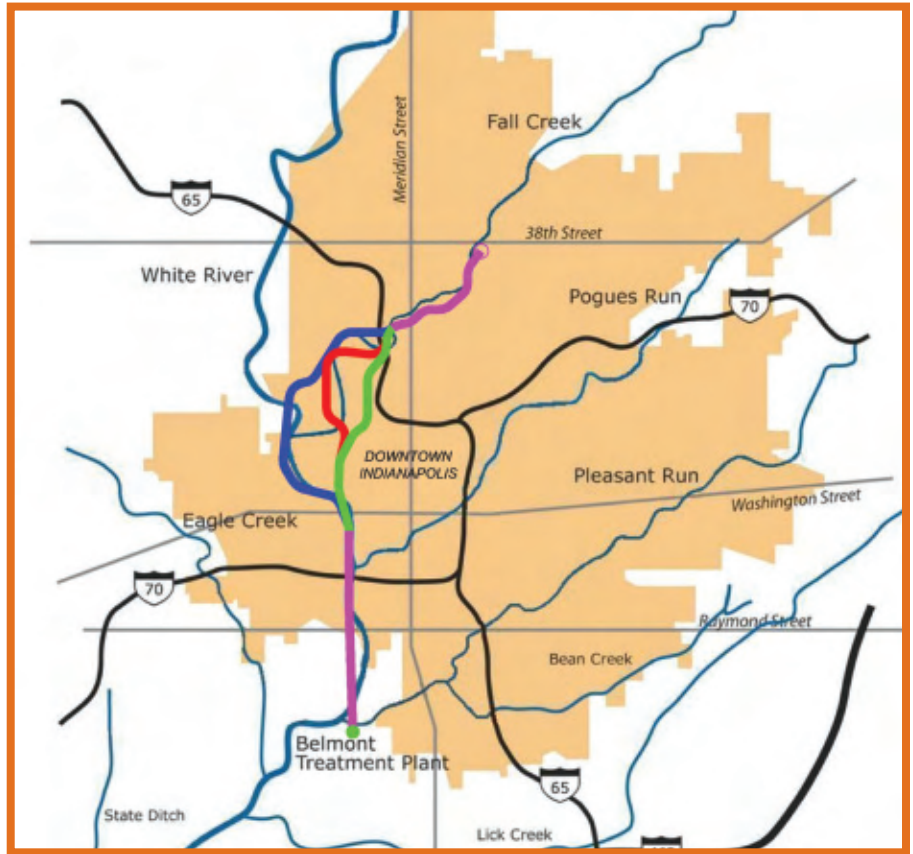
Tunneling minimizes disruption to neighborhoods, but some construction will be required on the surface. The city will need one or two staging areas at ground level to dig a vertical shaft and launch the machine, and another staging area for a retrieval shaft to remove the machine. New sewers and approximately 21 drop shafts will be dug to connect overflow pipes to the tunnel.

The study placed an emphasis on protecting the groundwater supply because parts of the tunnel will run under city wellfields. The city will ensure wellfield protection through groundwater monitoring, advanced tunnel construction practices, sealing the tunnel with grout and concrete, and limiting the tunnel's fill level and storage time during operation, Mr. Egger said.

The preliminary study suggests the tunnel will be 7.5 to 10 miles long and 26-35 feet in diameter. Three different tunnel routes were studied, as shown above. The final route will be selected after completing test borings, other studies, and communication with the public, Mr. Egger said.

The Fall Creek/White River Tunnel Evaluation Study was prepared by Black & Veatch and G.E.C. The city and the U.S. Army Corps of Engineers partnered to share the costs of the study.

More information on the study and how a tunnel works is contained in Black & Veatch's presentation, which can be found at www.indycleanstreams.org.

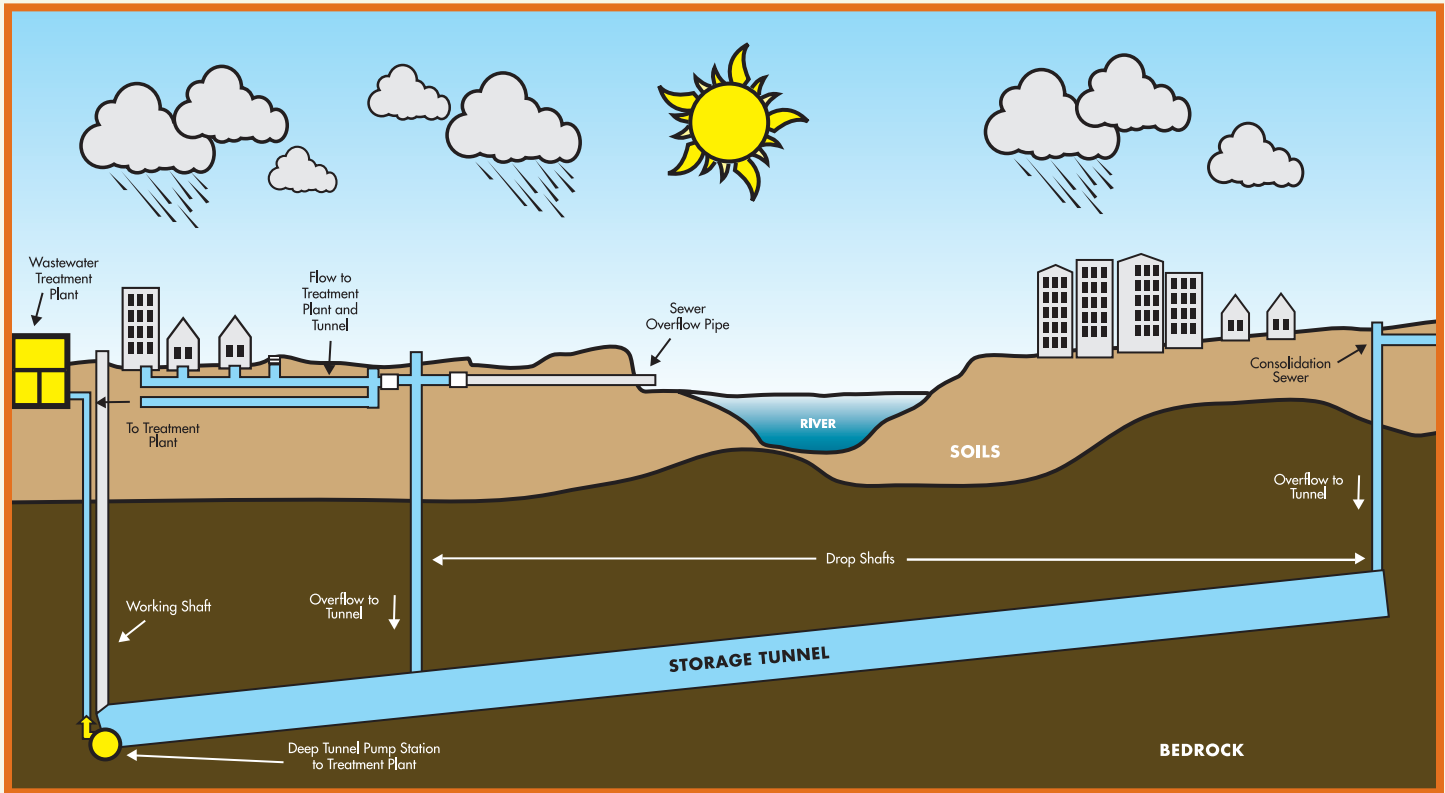


The city's study reviewed three possible routes for the deep tunnel, which would extend along Fall Creek and White River to the Belmont Advanced Wastewater Treatment Plant. The western route, shown in blue, is the preliminary preferred route because of its proximity to existing overflows and its avoidance of downtown and the IUPUI campus.



The photo above shows a typical cutter head on a rock tunnel boring machine. The machine will bore through the limestone bedrock more than 200 feet below ground level, cutting a tunnel 7.5 - 10 miles long and 26-35 feet in diameter. Construction is still several years away.

HOW A TUNNEL WORKS



The above diagram shows how a series of drop shafts will connect our existing sewers to the deep tunnel. During a storm when sewers are full, sewage will be sent to the tunnel through the drop shafts. When the storm is over, pumps will pump the stored water to wastewater treatment plants. The tunnel will be used 60-70 times each year, depending on rainfall and snowfall patterns.

SEPTIC TANK ELIMINATION PROGRAM

A STEP Toward Cleaner Streams & Healthier Neighborhoods

Under the Barrett Law, the city may charge property owners for construction of city sewers. Under the new Septic Tank Elimination Program (STEP), the city will pay to bring sewers to neighborhoods with approximately 18,000 homes in the next 20 years. Here's how the new program will work:

Existing Barrett Law Projects: Upon Council approval of the rate increase, property owners owing money for any existing Barrett Law sanitary sewer project will stop paying their assessments. Any outstanding Barrett Law debts will be covered by the city. However, the city will not reimburse property owners for any previous Barrett Law payments made.

New Septic Tank Elimination Projects: For new STEP projects, the city will pay for all sewer construction in the public right-of-way. The property owner will still be responsible for costs on their property (including abandoning the septic tank, installing a lateral to the home, and connecting to the sewer.) This will reduce the average homeowner's payments to the city by 60-70 percent. Actual costs and savings will vary with each property.

The city is exploring options for creating an affordable loan program to help qualified property owners finance the connection costs.



A STEP TOWARD CLEANER STREAMS
AND HEALTHIER NEIGHBORHOODS.

MAYOR CUTS RIBBON ON WET WEATHER UPGRADES AT TREATMENT PLANT

Indianapolis is one step closer to cleaning up our waterways. The installation of wet-weather storage basins and other improvements at both the Belmont and Southport Advanced Wastewater Treatment Plants were completed on budget and several months ahead of schedule.

Belmont, the older of the two plants, receives most of the city's wet-weather flows. However, Belmont's primary treatment capacity is twice the plant's secondary treatment capacity, resulting in overflows of partially treated wastewater to White River during wet weather.

The Belmont basins will reduce overflows from the primary treatment system by temporarily storing flows during wet weather, until Belmont or Southport have capacity to treat the flows.

The Department of Public Works (DPW) is pleased with the project's progress under construction firm Bowen Engineering Corp.

"Bowen achieved substantial completion of both projects ahead of the city's schedule, which will ensure that the facilities will be ready for the 2006 wet weather season," said Sandra Shafer, senior construction project manager for DPW.

The \$15.3 million wet-weather upgrades at Belmont include two earthen-walled, double-lined basins and two new primary clarifiers. Combined together, these facilities will store up to 34 million gallons of wastewater that would otherwise overflow during wet weather. Under the city's long-term plan, additional projects will be needed to add treatment capacity and reduce Belmont overflows even further.

The \$12.8 million Southport upgrade aims to reduce sewer overflows to Little Buck Creek and the White River. The Southport improvements include a new 75 million gallon/day raw sewage pump station, new 48-inch force mains to convey flows, and an earthen-walled double-lined 25-million-gallon basin for storage and later treatment.

HNTB Corp. of Indianapolis designed the two-plant project. Greeley and Hansen was the construction engineering firm.



Mayor Bart Peterson held a ribbon cutting ceremony August 22 to celebrate the completion of the storage basins. With the mayor are, from left, Bob Bowen of Bowen Engineering, John Kupke of HNTB, DPW Director James Garrard, Mike Haskin of Greeley & Hansen, DPW project manager Sandra Shafer, and DPW engineer James Parks.

INDIANAPOLIS
CLEAN STREAM TEAM

151 N. Delaware St., Suite 900
Indianapolis, IN 46204

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

PRESORT FIRST CLASS
U.S. POSTAGE
PAID
Printing Partners



made with recycled paper

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

Winter 2006 | Issue 8

Inside This Issue

- 2 Septic Tank Elimination Program
- 3 Northwest Sewer Upgrades
- 3 Street and Yard Flooding

Statement Of Purpose

The Indianapolis Clean Stream Team is overseeing many projects to keep raw sewage out of our waterways and improve the quality of life in our neighborhoods. Stream Line is published quarterly to keep you informed about the city's progress in reducing raw sewage overflows and restoring the health of our streams.

Contact Info

Send letters to:

Indianapolis Clean Stream Team
Attn: Jodi Perras
151 N. Delaware St.
Suite 900
Indianapolis, IN 46204

Tel: 317-327-8720

Fax: 317-327-8699

Email: jperras@indygov.org



**Sewer Overflow
Hotline:
327-1643**

CITY MOVING TOWARD CLEANER STREAMS AND HEALTHIER NEIGHBORHOODS

Council's Approval Sets Stage for Sewer System Overhaul

From the Director...

Thank you, Indianapolis!

On behalf of Mayor Bart Peterson, I'd like to thank the community for its strong support of our Clean Streams-Healthy Neighborhoods program.

On Oct. 31, the City-County Council approved Mayor Peterson's \$435 million, three-year plan to overhaul the city's sewer system. The plan includes expanding Indianapolis wastewater collection and treatment facilities, reducing flooding and drainage problems, and bringing sewer service to about 4,800 homes now on septic systems.

To fund the improvements, the council voted to increase sewer rates and stormwater fees over the next three years. For an average homeowner in Marion County, monthly sewer bills will rise from \$9.59 in 2005 to \$17.96 by 2008. Stormwater fees will increase by \$1, to \$2.25 per month beginning this spring. Also, a sewer connection fee of \$2,500 will be assessed on all new-home construction.

Even with the increase, Indianapolis rates remain competitive with cities across the state and country.

The benefits will be seen in neighborhoods across Marion County, as we implement projects that will:

- Continue the city's long-term plan to reduce the century-old problem of raw sewage overflows into White River, Fall Creek and other neighborhood streams;
- Eliminate the onerous Barrett Law process to convert neighborhoods from septic systems to city sewers;
- Address high-priority flood control and drainage issues throughout the county, including necessary repairs to Eagle Creek Dam; and
- Keep up with growing neighborhood needs for sewer capacity and sewage treatment.

In this issue of Stream Line, we are highlighting three projects that will be funded by the new revenue. For a full list of proposed projects, visit www.indycleanstreams.org and click on the "Projects" tab. You can search for projects by township, council district or project type.

The success of the Clean Streams-Healthy Neighborhoods plan would not have been possible without the support of many neighborhood leaders, businesses, civic groups and individuals.

Although sewers in many communities are "out of sight, out of mind," in Indianapolis we see the importance of investing in this buried treasure. Thanks to all of you who made it possible.

Find us on the Web at: www.indycleanstreams.org



Mayor Bart Peterson announces the Clean Streams - Healthy Neighborhoods Initiative on Oct. 3 with the support of DPW Director James Garrard, Councillor Lonnell Conley, other community leaders and students from Harshman Middle School.

THIRTY NEIGHBORHOODS TO GET SEWERS IN NEXT THREE YEARS

City Ending Use of Barrett Law for Sewer Projects

The city's Clean Streams-Healthy Neighborhoods program will bring sewer service to 30 neighborhoods with failing septic systems during the next three years.

"Septic systems have a limited life and eventually fail," Mayor Bart Peterson said. "We will now be able to bring sewer service to homes, eliminate unhealthy conditions and ensure that their sewage gets high-level treatment."

Under the city's Septic Tank Elimination Program (STEP), the Department of Public Works (DPW) will replace failing septic systems with sanitary sewers in approximately 18,000 homes throughout Marion County by 2025. From 2006-2008, about 4,800 homes will be converted to sewers.

Projects planned in 2006 include the Bangor/Delaware neighborhood on the city's south side, which has suffered longstanding health and environmental concerns caused by septic systems.

In 1999, a Marion County Health Department survey found a 38 percent problem or failure rate of septic systems in Bangor/Delaware, including bleed outs, repairs, sewage backups and unsafe levels of *E. coli* bacteria in drainage ditches.

"*E. coli* and other potentially harmful bacteria that seep from failing septic systems are health hazards," said Anne Marie Smrchek, DPW project engineer. "The silt and clay soil in the Bangor/Delaware neighborhood is poor for septic waste absorption."

Resident John Carter, who built his home in Bangor/Delaware in 1963, has to pump his failed septic tank at least once a month.

"We've wanted to be connected to the sewers for so long," said Carter. "We'd be happy staying here forever if it weren't for the septic tank. During the winter and spring, you can smell the sewage in the neighborhood. It is embarrassing."

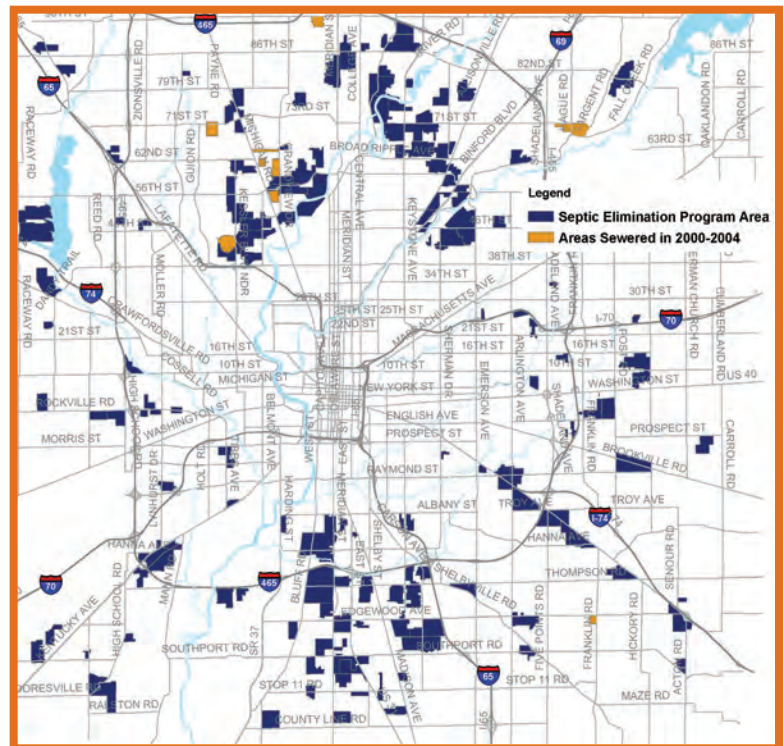
United Consulting Engineers, Inc., is the design engineer for the Bangor/Delaware project. Total project costs are estimated at \$11 million.

Under the new STEP program, the city will stop using the state's Barrett Law for all new septic conversion projects. Homeowners still will have to pay private property costs to connect to new sewers, including abandoning the septic tank, installing a lateral to the home, and a \$2,500 connection fee. However, the new policy is expected to cut the typical homeowner's total costs from \$11,000 to \$5,000. Actual costs will vary with each property.

For more information on the STEP program, visit our Web site at www.indycleanstreams.org. To find out when a neighborhood is scheduled to receive sewer service, go to <http://imaps.indygov.org/zoning>.



**A STEP TOWARD CLEANER STREAMS
AND HEALTHIER NEIGHBORHOODS.**



This map shows neighborhoods with 18,000 homes that have been targeted for sewer service in the next 20 years. Areas shown in orange were sewered in 2000-2004. The remaining neighborhoods will receive sewers by 2025. An additional 12,000 homes on septic systems will need to be addressed as the county grows and sewer service extends into the remaining rural areas.

NORTHWEST SIDE SEWER UPGRADES MOVING FORWARD

The Department of Public Works (DPW) is moving forward with repairs and engineering projects to improve sewer service for fast-growing neighborhoods on the city's northwest side.

The sewer improvements will increase the capacity of the Belmont North Interceptor sewer, which serves Pike Township, western Washington Township and northeastern Wayne Township.

Over the years, the growth of homes and businesses in this area has pushed the capacity of the Belmont North Interceptor near its limits. In addition, many of the aging interceptor lines are in need of repair.

The Belmont North Interceptor sewer begins near the intersection of West 86th Street and Zionsville Road as a 27-inch reinforced concrete pipe sewer and extends east and south to the intersection of 19th Street and Lafayette Road. There it merges with the Belmont West Interceptor to form the Belmont Interceptor, which carries sewage to the Belmont Advanced Wastewater Treatment Plant.

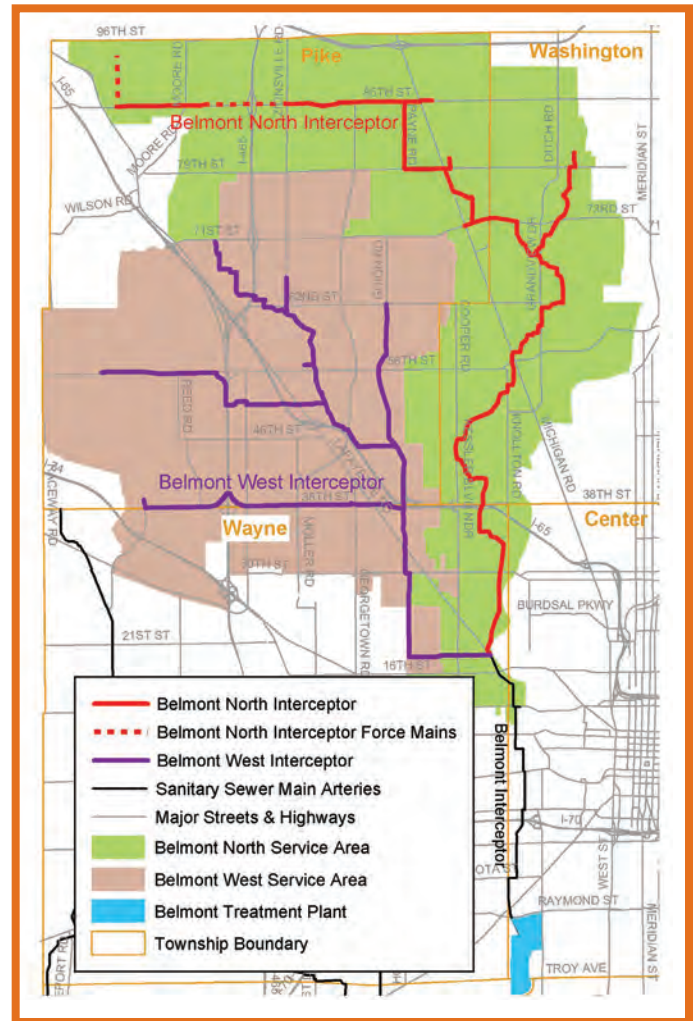
"Interceptors are the main arteries in our sewer system," said DPW Director James Garrard. "These interceptors collect sewage from smaller sewers that serve many homes and businesses. It's important to keep these interceptors in good condition."

The first phase of the Belmont North Interceptor upgrade will repair worn manholes to reduce the infiltration of clear water, said Mike Latos, DPW project engineer. The second phase will construct a parallel sanitary sewer line, which will split the sewage flowing from the northwest side and relieve the flow going into the original line.

"The parallel interceptors will increase the capacity and help convey the sewage south to the Belmont Advanced Wastewater Treatment Plant for treatment," Latos said.

The Belmont North Interceptor is a high priority of the city's Sanitary Sewer Master Plan, which details approximately \$370 million in necessary system upgrades over a 15- to 30-year period.

Planning, design, construction and inspection of the Belmont North Interceptor are expected to cost approximately \$100 million. HNTB Corp. and American Consulting, Inc., were the engineering firms involved in planning the new interceptor. Design and construction firms will be chosen in the future.



DPW TACKLES SOUTHWEST SIDE STREET AND YARD FLOODING

Rain showers that bring street, yard and basement flooding should be just a memory in a few years for the Mars Hill, Lafayette Heights and Maywood neighborhoods on the city's southwest side.

Upon approval of bond funding, the Department of Public Works (DPW) will embark on several needed stormwater drainage projects in this area of the city, which was built on a mostly flat, low-lying flood plain.

A DPW community survey showed that 72 percent of respondents in these neighborhoods reported their streets had standing water for more than six hours after rainfall. Thirty-nine percent reported the standing water was greater than one foot.

"Standing water is a health and safety hazard," said Bill Bowman, DPW project engineer. "Frozen water on streets causes black ice and pot holes and deteriorates pavement. During warm weather, standing water can become a breeding ground for mosquitoes."

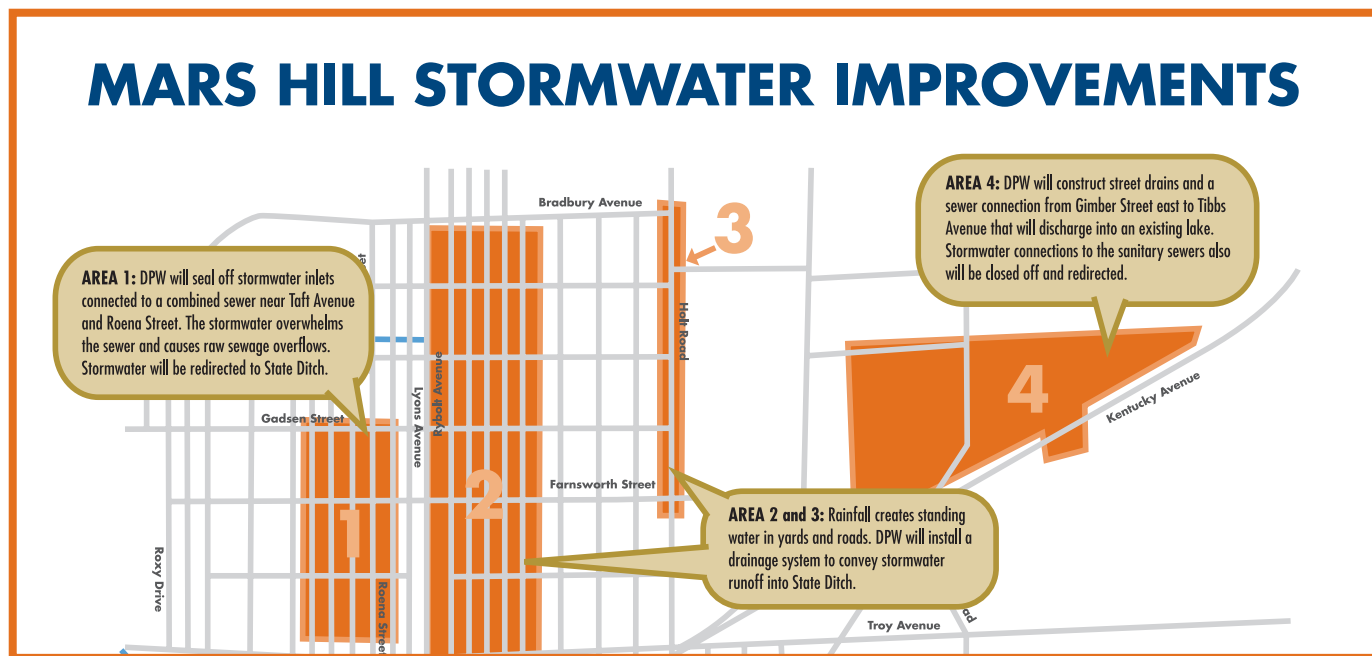
If runoff conditions were improved in this area, stormwater would drain to State Ditch between Hybolt Avenue and Lyons Avenue. However, insufficient drain inlets, roadside ditches filled with gravel, and levees built by residents prevent water from flowing properly to State Ditch, which itself is clogged with debris and occasionally overflows its banks, Bowman said.

(continue "STREET AND YARD FLOODING" on Page 4)

STREET AND YARD FLOODING *(continued from Page 3)*

"The residents are ecstatic that the City-County Council approved the mayor's proposal," Bowman said. "They've been waiting for years for this kind of action."

Expected completion of the stormwater improvement project in the Mars Hill/South Wayne neighborhoods is 2007-2008 at a cost of \$3.2 million. RW Armstrong & Associates is the design engineer.



INDIANAPOLIS CLEAN STREAM TEAM

151 N. Delaware St., Suite 900
Indianapolis, IN 46204

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program

Summer 2006 | Issue 9

Inside This Issue

- 2 DPW Introduces Students to Engineering
- 2 River Group Recognized
- 4 Mayor Peterson Wins National Award

Statement Of Purpose

The Indianapolis Clean Stream Team is overseeing many projects to keep raw sewage out of our waterways and improve the quality of life in our neighborhoods. Stream Line is published quarterly to keep you informed about the city's progress in reducing raw sewage overflows and restoring the health of our streams.

Contact Info

Send letters to:

Indianapolis Clean Stream Team
Attn: Jodi Perras
151 N. Delaware St.
Suite 900
Indianapolis, IN 46204

Tel: 317-327-8720
Fax: 317-327-8699
Email: jperras@indygov.org



**Sewer Overflow
Hotline:
327-1643**

CITY REACHES AGREEMENT IN PRINCIPLE ON PLAN TO CURB RAW SEWAGE OVERFLOWS

30-Day Public Comment Period Ends August 18

INDIANAPOLIS— The city of Indianapolis has reached a tentative agreement with state and federal agencies on a 20-year plan to greatly reduce raw sewage overflows into Marion County waterways, ensuring continued progress in improving the quality of life in many Indianapolis neighborhoods, Mayor Bart Peterson announced July 19.

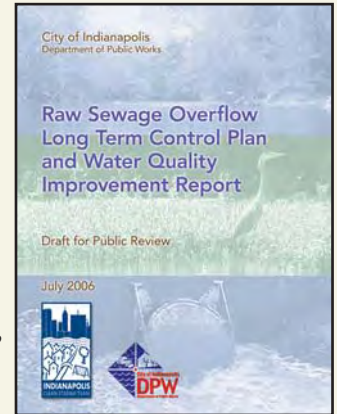
Before finalizing the plan, which is a key component of the mayor's Clean Streams-Healthy Neighborhoods program, the city is holding a 30-day public comment period. Once finalized, the plan will be submitted to the Indiana Department of Environmental Management and U.S. Environmental Protection Agency and filed in federal court along with a consent decree.

The \$1.8 billion plan represents the largest investment in clean water infrastructure in the city's history. All construction will be completed by Dec. 31, 2025.

"Since 2000, we have invested more than \$200 million and reduced raw sewage overflows by 145 million gallons per year," Mayor Peterson said. "This long-term plan will guarantee ongoing, sustained progress toward cleaner streams and healthier neighborhoods for years to come."

Under the tentative agreement, the city has agreed to invest:

- \$1.73 billion by December 2025 to significantly reduce raw sewage overflows from the combined sewer system *See "20-Year Plan," Page 3*

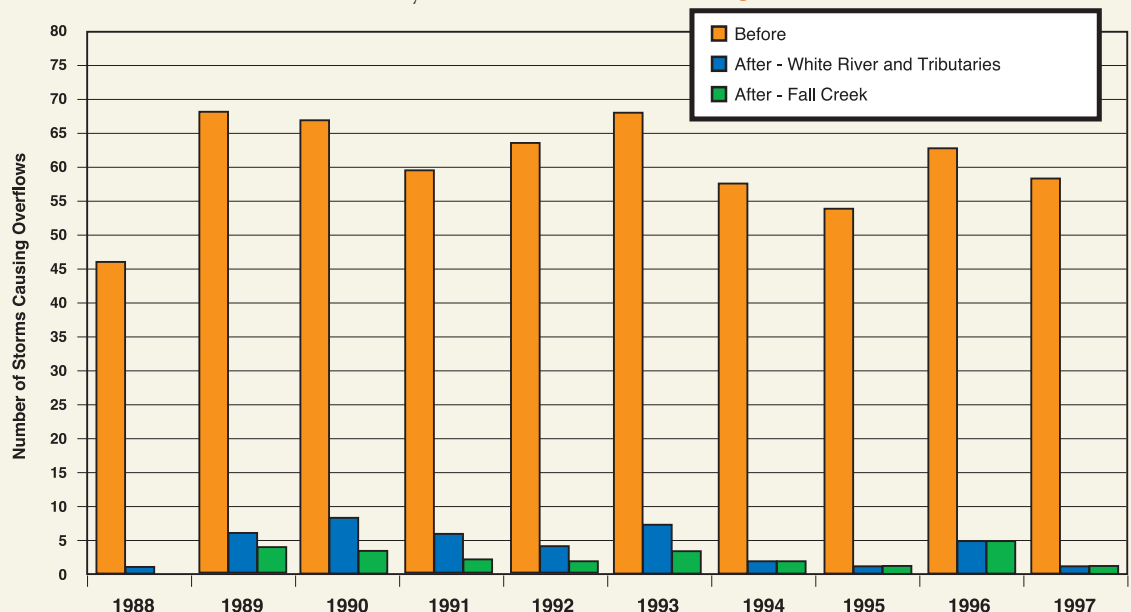


PUBLIC HEARING ON THE LONG TERM CONTROL PLAN

August 3, 2006

7 p.m.

University of Indianapolis
1400 E. Hanna Avenue
Good Hall, Room 105



Source: 1950-2003 NetSTORM Simulation. Baseline Conditions and Selected LTCP.

Note: (1) For before conditions, there is an average annual frequency of 60 overflow events per year. The distribution of the 60 events is based on the 54-year precipitation record.

(2) It is estimated that at least one CSO outfall structure would discharge for the listed number of dates each year.

The city's plan will reduce the frequency of overflows from about 60 storms per year to an average of 2 on Fall Creek and 4 on the remaining streams. As shown above, the number of overflow events will vary from year to year, depending on the weather and the severity of storms.

Find us on the Web at: www.indycleanstreams.org



I am pleased to announce the completion of the city's long-term control plan to reduce raw sewage overflows. The \$1.8 billion plan will have many benefits to our community, such as:

- Improving the ability of the sewer system and treatment plants to handle rainfall and snowmelt, so sewers would overflow only during large storms
- Capturing 97 percent of wet-weather sewer flows on Fall Creek, reducing the frequency of overflows from about 60 storms per year to 2 storms in a year with average rainfall
- Capturing 95 percent of wet-weather sewer flows on White River and other streams, reducing overflows to 4 storms in an average year
- Improving oxygen levels for fish, reducing E. coli bacteria levels, and reducing or eliminating odors, untreated sewage and trash in neighborhood streams

The city also will be required to invest \$50.4 million on specific sanitary sewer improvements by 2015 to eliminate chronic sanitary sewer overflows in the separate, sanitary sewer system.

The plan is one of four components of the mayor's 20-year Clean Streams-Healthy Neighborhoods Program. The other components, though not a part of the federal agreement, are:

- Bringing sewer service to 18,000 homes in neighborhoods with septic systems
- Expanding and repairing the separate sanitary sewer system to meet growing neighborhood and business needs
- Improving neighborhood drainage and flood protection

Comings and Goings

Many DPW staff deserve credit for the plan's completion. Former DPW Director Jim Garrard helped negotiate the plan's final details while also taking over economic development activities in the mayor's office. Mona Salem, a DPW leader since 2000, left her position as the city's top engineer earlier this year to take a private sector position closer to her family in the Middle East. Our new deputy director of engineering is Carlton Ray, who has helped steer the city's raw sewage overflow program since the 1990s. Thanks to Jim, Mona, Carlton and all the DPW staff and contractors who made the plan's completion possible.

BRIEFS

DPW celebrates National Engineers Week by introducing young people to the profession

To highlight National Engineers Week 2006, the Indianapolis Department of Public Works (DPW) kicked off "Connecting Educators to Engineering" to introduce young people to engineering and technical careers.

DPW-Engineering partnered with the Indiana chapter of the American Council of Engineering Cos., sending two-person teams to discuss the engineering profession with Indianapolis middle school students during National Engineers Week, Feb. 20-24.

Professionals who participated in "Connecting Educators to Engineering" also are volunteering for field trip assistance, after-school activities and/or mentoring projects.

"The presenters did a wonderful job of planting seeds for potential career fields for my students," said Joan Jacobs, guidance counselor at Eastwood Middle School in Washington Township.



DPW Senior Project Manager John Oakley discusses the engineering profession with a group of middle school students.

Clean Stream Team Honored By Friends of White River

The Indianapolis Clean Stream Team recently was recognized for exemplary service to the White River from the Friends of White River. Former DPW Director James Garrard (shown at far right in the photo) accepted the governmental leadership award along with other honorees at the Friends' annual meeting earlier this year.



Dirty Dozen Hunting & Fishing Club Earns Clean Stream Team Award

Volunteers turned out to pick up garbage and debris around Fall Creek during this year's Fall Creek Clean Up on March 25, which was sponsored by the Dirty Dozen Hunting & Fishing Club. For the organization's sustained commitment to preserving our waterways, the club received an honorary membership to the Clean Stream Team at the seventh annual event. Among the volunteers were IPS students, students from local universities and city employees.



DPW Public Information Officer Margie Smith-Simmons and her son, Chad Simmons, presented an honorary Clean Stream Team award to Joe King of the Dirty Dozen Hunting & Fishing Club.

20-Year Plan (continued from page 1)

- \$50.4 million by December 2015 to eliminate chronic overflows from seven locations in the separate, sanitary sewer system
- \$3.5 million by December 2010 on supplemental environmental projects to eliminate septic systems in the Epler-Meridian and Banta-Southport neighborhoods.

Although not a required component of the agreement, the city also plans an additional \$64.3 million in watershed improvement projects, such as streambank restoration and streamflow augmentation, for a total investment of more than \$1.8 billion in 2005 dollars.

The 30-day public review and comment period for the plan will end August 18. The plan is available on-line at www.indycleanstreams.org, at all Marion County public library branches, the Department of Public Works office at 604 N. Sherman Drive, and the Indianapolis Clean Stream Team at 151 N. Delaware, Suite 900. Electronic copies of the plan on CD-Rom can be obtained by calling 317-327-8720.

A public hearing on the proposed plan will be held at 7:00 p.m. on August 3 at Good Hall, Room 105, University of Indianapolis, 1400 E. Hanna Avenue. Written comments on the plan should be submitted by August 18 either on-line at the address above or to the Indianapolis Clean Stream Team, 151 N. Delaware St., Suite 900, Indianapolis, IN 46204.

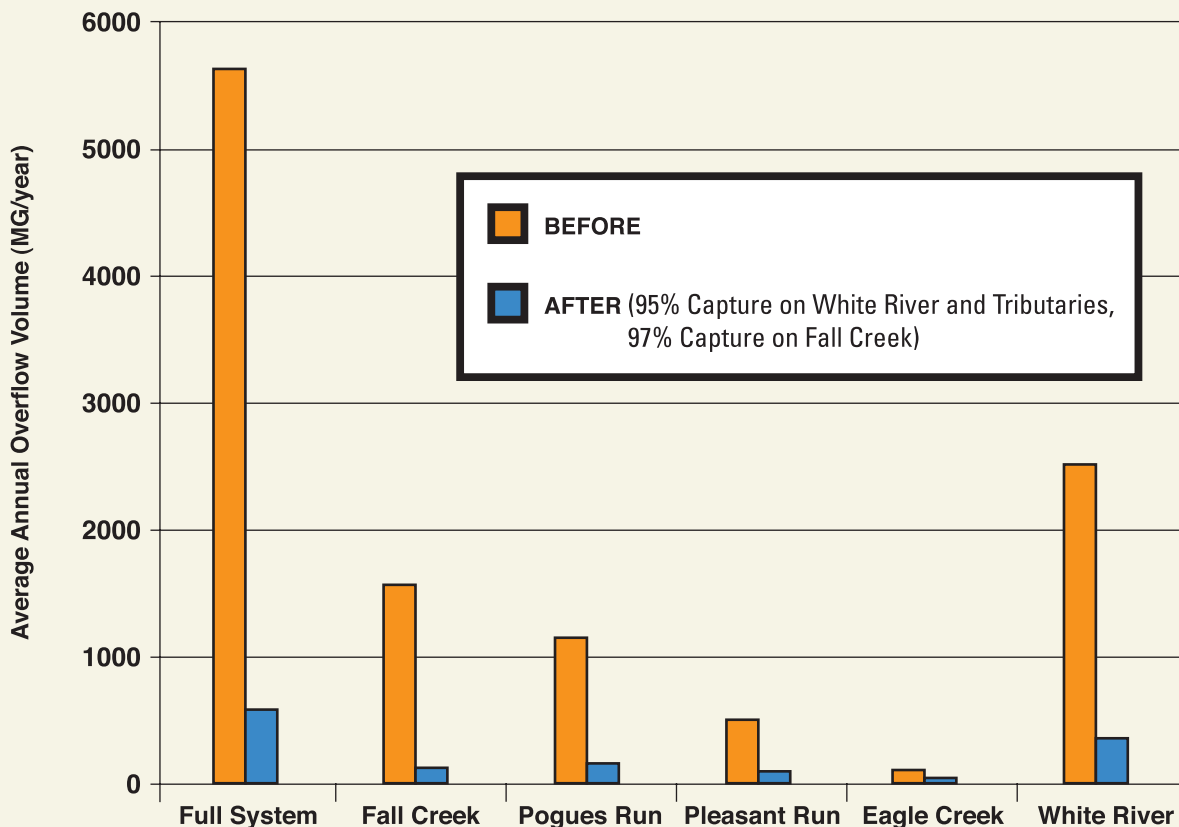
“Our draft plan has been built upon years of public dialogue,” DPW Director Kumar Menon said. “We’ve conducted extensive outreach to neighborhoods, the business community and environmental interest groups – and benefited from the advice of many stakeholders and experts through our Clean Stream Team Advisory Committee. However, we didn’t want to finalize the plan without an opportunity for our citizens to provide their comments and input.”

The 20-year plan to reduce sewage overflows will include the following major construction projects:

- A 224-million-gallon tunnel located deep underground along Fall Creek and White River. The tunnel will store sewage overflows during rain storms, then pump the sewage to the city’s wastewater treatment plants after the storm subsides. Similar sewage storage tunnels have been built in Chicago, Cleveland, Milwaukee, and many other cities.
- New, larger sewers and underground storage tanks along affected waterways to capture overflows and carry them to the central tunnel or treatment plants.
- Improvements and expansion at the Belmont and Southport Advanced Wastewater Treatment Plants to increase their ability to store and treat incoming flows during wet weather.
- A new 12-foot diameter sewer connecting the two treatment plants, enabling the city to better manage and treat flows during wet weather.
- Local sewer separation projects to eliminate isolated raw sewage overflows on White River, State Ditch, Lick Creek and the upstream ends of Fall Creek, Pogues Run and Bean Creek.
- Inflatable dams and pinch valves at key points in the sewer system, enabling the city to better use existing sewer lines to contain and reduce sewage overflows.

The plan will improve the ability of the sewer system and treatment plants to handle rainfall and snowmelt, so sewers overflow only during very large storms when streams are flowing too fast for wading or swimming.

A rate increase approved last year by the City-County Council will fund projects planned in 2006-2008.



Average annual overflow volumes from the city's combined sewer system will be reduced dramatically under the 20-year plan, as shown.

MAYOR PETERSON WINS NATIONAL CLEAN WATER AWARD



Mayor Peterson received his award from NACWA President Donnie Wheeler.

Mayor Bart Peterson was recently honored by the National Association of Clean Water Agencies (NACWA) with a 2006 National Environmental Achievement Public Service Award.

NACWA said Mayor Peterson was being recognized “for being an outspoken advocate for the need to improve the Indianapolis’ sewer infrastructure and for aggressively addressing the city’s [combined sewer overflow] CSO problem. You are a true champion of wastewater utility issues.”

The mayor’s achievements since taking office in 2000 include:

- Submitting a long-term control plan in 2001 in advance of permit requirements and investing more than \$200 million into CSO-related early action projects.
- Gaining passage of a 17.8 percent sewer rate increase in 2001 and an 87 percent, three-year rate increase for 2006-2008 to fund necessary sewer improvements.
- Implementing the first real-time CSO public notification program in the nation.
- Establishing stormwater construction standards in the combined sewer area, although not required to do so by regulatory agencies.

- Developing a Capacity Management, Operation and Maintenance (CMOM) program in 2000-01 without permit requirement to do so.
- Developing a county-wide Sanitary Sewer Master Plan for large-diameter sewers and conducting Sanitary Sewer Evaluation Studies to identify and address small-diameter sewer needs.
- Creating a new Septic Tank Elimination Program (STEP) that will use city financing to provide proper sewage treatment to 900 homes each year.

“None of these accomplishments would have been possible without the mayor’s leadership,” said DPW Director Kumar Menon. “While some elected officials find it difficult to put money and attention into underground infrastructure that many will never see, Mayor Peterson has been a leader who recognizes that the city could no longer afford to ignore its waterways and needs for improved sewage treatment.”

NACWA represents more than 300 wastewater utilities around the country, including Indianapolis DPW. NACWA members serve the majority of the sewered population in the United States and collectively treat and reclaim more than 18 billion gallons of wastewater daily.

INDIANAPOLIS CLEAN STREAM TEAM

151 N. Delaware St., Suite 900
Indianapolis, IN 46204

Stream Line

City of Indianapolis / Department of Public Works / Clean Stream Program



FOR IMMEDIATE RELEASE

Wednesday, July 19, 2006

CONTACT:

Justin Ohlemiller, [317] 327-3622

Margie Smith-Simmons, 327-4669

City of
Indianapolis
Bart Peterson, Mayor



City reaches agreement in principle with state, EPA on plan to curb raw sewage overflows

INDIANAPOLIS— The city of Indianapolis has reached a tentative agreement with state and federal agencies on a 20-year plan to greatly reduce raw sewage overflows into Marion County waterways, ensuring continued progress in improving the quality of life in many Indianapolis neighborhoods, Mayor Bart Peterson announced today.

Before finalizing the plan, which is a key component of the mayor's "Clean Streams-Healthy Neighborhoods" program, the city will hold a 30-day public comment period. Once finalized, the plan will be submitted to the Indiana Department of Environmental Management and U.S. Environmental Protection Agency and filed in federal court along with a consent decree.

The \$1.8 billion plan represents the largest investment in clean water infrastructure in the city's history. All construction will be completed by December 31, 2025.

"Since 2000, we have invested more than \$200 million and reduced raw sewage overflows by 145 million gallons per year," Mayor Peterson said. "This long-term plan will guarantee ongoing, sustained progress toward cleaner streams and healthier neighborhoods for years to come."

Under the tentative agreement, the city has agreed to invest:

- \$1.73 billion by December 2025 to significantly reduce raw sewage overflows from the combined sewer system;
- \$50.4 million by December 2015 to eliminate chronic overflows from seven locations in the separate, sanitary sewer system; and
- \$3.5 million by December 2010 on supplemental environmental projects to eliminate septic systems in the Epler-Meridian and Banta-Southport neighborhoods.

Although not a required component of the agreement, the city also plans an additional \$64.3 million in watershed improvement projects, such as streambank restoration and streamflow augmentation, for a total investment of more than \$1.8 billion in 2005 dollars.

A public hearing on the proposed plan will be held at 7 p.m. on August 3 at Good Hall, Room 105, University of Indianapolis, 1400 E. Hanna Ave. Written comments on the plan should be submitted by August 18 either on-line at the address above or to the Indianapolis Clean Stream Team, 151 N. Delaware St., Suite 900, Indianapolis, IN 46204.

(more)

Mayor's Press

2542 City County Building
200 East Washington Street
Indianapolis, Indiana 46204

[317] 327 3690
[fax] 327 3686
[TDD] 327 5186
indygov.org

The 30-day public review and comment period for the plan will end August 18. The plan is available on-line at www.indycleanstreams.org, at all Marion County public library branches, the Department of Public Works office at 604 N. Sherman Drive, and the Indianapolis Clean Stream Team at 151 N. Delaware, Suite 900. Electronic copies of the plan on CD-Rom can be obtained by calling 317-327-8720.

“Our draft plan has been built upon years of public dialogue,” Public Works Director Kumar Menon said. “We’ve conducted extensive outreach to neighborhoods, the business community and environmental interest groups – and benefited from the advice of many stakeholders and experts through our Clean Stream Team Advisory Committee. However, we didn’t want to finalize the plan without an opportunity for our citizens to provide their comments and input.”

This program will affect – and benefit – all residents of Marion County. Raw sewage overflows from outdated sewers are a century-old problem faced by hundreds of cities, especially in the Midwest and Northeast. When it rains or snow melts, stormwater can overload the combined storm-and-sanitary sewers in older neighborhoods.

Historically, in a typical year, nearly 6 billion gallons of untreated sewage overflowed from more than 130 outfall pipes located along the White River, Fall Creek, Pleasant Run, Bean Creek, Pogues Run, Eagle Creek, Lick Creek and State Ditch. Another 2 billion gallons of partially treated sewage overflowed at the city’s wastewater treatment plants.

The 20-year plan to reduce sewage overflows includes the following major construction projects:

- A 224-million-gallon tunnel located deep underground along Fall Creek and White River. The tunnel will store sewage overflows during rain storms, then pump the sewage to the city’s wastewater treatment plants after the storm subsides.
- New, larger sewers and underground storage tanks along affected waterways to capture overflows and carry them to the central tunnel or treatment plants.
- Improvements and expansion at the Belmont and Southport Advanced Wastewater Treatment Plants to increase their ability to store and treat incoming flows during wet weather.
- A new 12-foot diameter sewer connecting the two treatment plants, enabling the city to better manage and treat flows during wet weather.
- Local sewer separation projects to eliminate isolated raw sewage overflows on White River, State Ditch, Lick Creek and the upstream ends of Fall Creek, Pogues Run and Bean Creek.
- Inflatable dams and pinch valves at key points in the sewer system, enabling the city to better use existing sewer lines to contain and reduce sewage overflows.

The plan will improve the ability of the sewer system and treatment plants to handle rainfall and snowmelt, so sewers overflow only during very large storms when streams are flowing too fast for wading or swimming. The updated sewer system will:

- Capture 97 percent of wet-weather sewer flows on Fall Creek, reducing the frequency of overflows to Fall Creek from about 60 storms per year to two storms in a year with typical rainfall.
- Capture 95 percent of wet-weather sewer flows on White River and other streams, reducing overflows to four storms in a typical year. Actual overflow frequency will depend on weather conditions, with as many as six to 10 overflows occurring in wet years and as few as zero in dry years.

(more)

- Dramatically reduce the amount of sewage overflowing into our streams, improve oxygen levels for fish, reduce *E. coli* bacteria levels and significantly reduce or eliminate odors, untreated sewage and trash in neighborhood streams.

In addition to reducing overflows in the combined sewer area, the city will implement projects to eliminate seven chronic sanitary sewer overflows in the separated sewer system by 2015.

The plan is one of four components of the Mayor's 20-year Clean Streams-Healthy Neighborhoods Program. The other components, though not a part of the federal agreement, are:

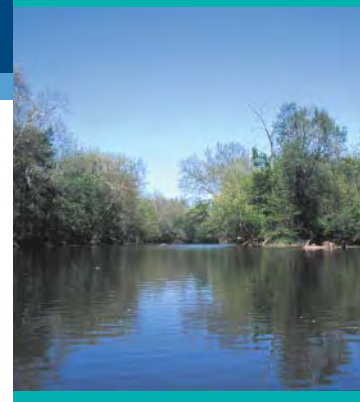
- Bringing sewer service to 18,000 homes in neighborhoods with failing or aging septic systems;
- Expanding and rehabilitating the separate sanitary sewer system to meet growing neighborhood and business needs; and
- Improving neighborhood drainage and flood protection.

A rate increase approved last year by the City-County Council will fund projects planned in 2006-2008. During that time, the city will undertake \$400 million in sewage overflow, sanitary sewer and water treatment projects and \$40 million in flood control and drainage improvements. Additional rate increases will be needed every year or two beginning in 2009 to finance the 20-year plan and meet other Clean Water Act goals.

Clean Stream Program



Beautiful, clean streams and rivers add to the quality of life in our city. The White River and neighborhood streams are resources that residents and visitors enjoy for fishing, boating and other recreation. Birds, fish, turtles and a variety of other wildlife make their homes in and along these waterways.



The Problem

The White River and many of our neighborhood streams are polluted by sewer overflows, failing septic systems and urban stormwater runoff.

Raw sewage overflowing into our streams is a health hazard, smells and looks disgusting, hurts the environment and harms the quality of life in our neighborhoods.

Overflows happen because the 100-year-old sewer system in the old city limits was designed to carry both sewage and rainwater. When it rains as little as a quarter-inch, these sewers overflow into nearby streams, including White River, Fall Creek, Eagle Creek, Pleasant Run, Bean Creek and Pogues Run.

Elsewhere in the city, many neighborhoods are still served by aging septic systems that don't function well in Marion County soils. Even outside the old city limits, our separate sewer system is in need of expansion and repair.



The Solutions

The Clean Water Act requires Indianapolis to address these problems, and Mayor Peterson has been moving forward to clean our waterways since he took office. More than \$200 million has been invested to reduce sewer overflows and improve our sewer system and treatment plants. Here's what's being done:

RAW SEWAGE OVERFLOW CONTROL PROGRAM

The city now has a long-term plan to capture raw sewage overflows during all but a few large storms each year – when people are not likely to be using the streams.

The plan involves digging a deep tunnel along White River and Fall Creek to capture overflows during a storm. Underground storage tanks and new sewers also will capture raw sewage that would otherwise flow into the streams.



The tunnel and underground tanks will store the sewage until after a storm, when it will be sent to the city's sewage plants for treatment. Many "early action" projects are already underway or completed.

SEPARATE SEWERS AND TREATMENT PLANT IMPROVEMENTS

The city also has developed a Sanitary Sewer Master Plan to address sewer needs outside the old city limits. This plan prioritizes projects to address needs in areas that have grown in population and sewer use. We also need additional investments to maintain and upgrade the city's sewage treatment plants, rehabilitate aging sewers and keep sewage pumps and lift stations in working order.

SEPTIC TANK ELIMINATION PROGRAM

To address health hazards in our neighborhoods, the city has been moving forward to convert neighborhoods on septic systems to the sewer system. In the past, the city has used the state's Barrett Law process to require homeowners to share the costs to construct new sewers. This caused hardships for many homeowners, especially low-income residents and the elderly. Under the new Septic Tank Elimination Program (STEP), the city will pay for new sewer construction in these neighborhoods. Homeowners will still have to pay a contractor and connection fees to connect to the new sewers. However, this will cut the direct cost to homeowners while reducing health hazards and improving property values in these neighborhoods.



Our Investment

Through these programs, the city is poised to make the largest investment in clean water infrastructure in its history. Most projects

will be financed through the state's low-interest loan fund or by selling municipal bonds. Grants also will be pursued, but unfortunately state and federal governments put most of the burden on local ratepayers to finance these projects.

On October 31, 2005, the City-County Council approved new sanitary sewer rates for 2006-2008. The rates will finance approximately \$400 million in sewer improvements, including:

- Reducing raw sewage overflows into our waterways, as required under federal law;
- Expanding and maintaining our two sewage treatment plants;
- Rehabilitating aging sewers and lift stations;
- Adding sewer capacity in rapidly developing areas of the county; and
- Extending sanitary sewers to 4,800 homes now served by septic systems.

For a list of planned projects for 2006-2008, go to www.indycleanstreams.org and click on the "Projects" tab, where you can search by council district, project type, or township.

In future years, rate increases will be needed every year or two to finance more clean water infrastructure projects. Even so, Indianapolis sewer rates are among the lowest in the state and nation. Sewer rates are also low when compared with other utilities, such as phone, electric, gas and cable TV.

In addition, a \$1 per month increase in the residential stormwater utility charge has been approved to pay for \$35 million in flood control and drainage projects. This charge appears on residential property tax bills.

HOW CAN I GET INVOLVED?

You can help keep our waterways clean and our sewers flowing by adopting environmentally friendly practices:

- Disconnect downspouts and sump pumps connected to the sewer system. Their flow takes up capacity we need to carry sewage.
- Don't send fats, oils and grease down the drain. They can clog our sewers and cause overflows.
- Clear gutters and storm sewer drains of leaves and debris.
- Never dispose motor oil, antifreeze, battery acid and household chemicals down the drain. Properly dispose these materials through the city's ToxDrop program. Call 327-4TOX to learn how.
- Reduce water use in your homes and businesses.
- Sign up to receive e-mail warnings of sewer overflows at www.indycleanstreams.org or call the Sewer Overflow Hotline at 327-1643 before an outing near affected waterways.

You also may want to support the creation of a national trust fund to provide federal dollars that help communities like ours pay for clean water. For more information, go to www.cleanwateramerica.org.

To learn more, visit the Indianapolis Clean Stream Team Web site at www.indycleanstreams.org.

For other issues and concerns, please call the Mayor's Action Center at 327-4MAC or 327-4622.

Photos of White River and blue heron provided by Stephen Sellers.



Raw Sewage Overflow Long-Term Control Plan

THE PROBLEM

- The White River and many of our neighborhood streams are polluted by sewer overflows during rain and snow storms.
- Raw sewage overflowing in our streams is a health hazard, smells and looks disgusting, hurts the environment and harms the quality of life in our neighborhoods.
- Overflows happen because the 100-year-old sewer system in the old city limits was designed to carry both sewage and rainwater. When it rains as little as a quarter-inch, these sewers overflow into nearby streams, including White River, Fall Creek, Eagle Creek, Pleasant Run, Bean Creek and Pogues Run.



THE SOLUTION

The city now has a long-term plan to capture raw sewage overflows during all but a few large storms each year. This plan will protect streams during dry weather and small storms when people are most likely to be using them for recreation.

The plan involves digging a deep tunnel along White River and Fall Creek to capture overflows during a storm. New sewers along Eagle Creek, Pleasant Run, Bean Creek and Pogues Run will capture overflows and direct them to the tunnel and treatment plants.

Underground storage tanks and new sewers also will capture raw sewage that would otherwise flow into the streams. The tunnel and underground tanks will store the sewage until after a storm, when it will be sent to the city's sewage plants for treatment. In some neighborhoods, the city will separate sewers to eliminate overflows.

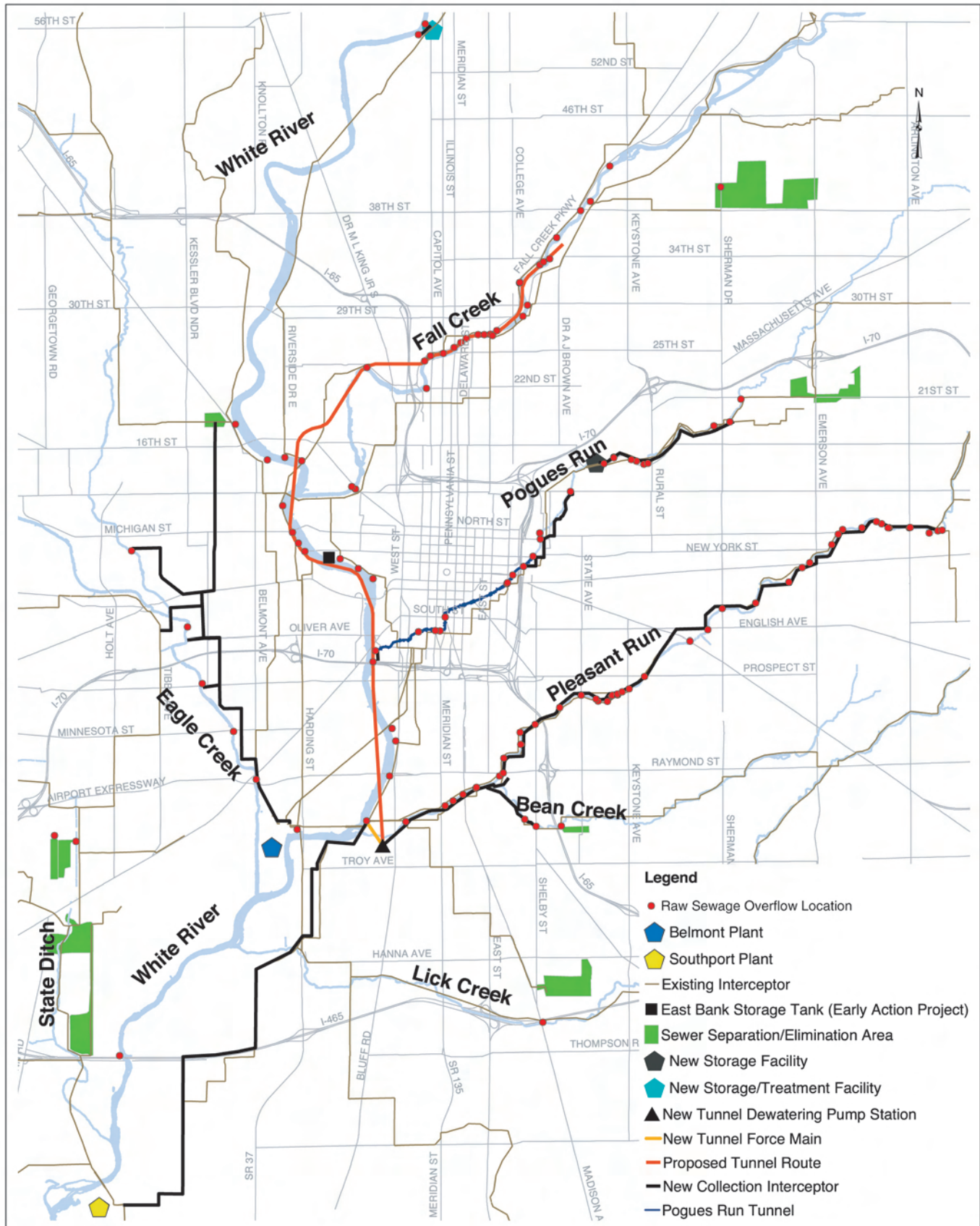
Many "early action" projects already are underway or completed.

THE COSTS AND BENEFITS

The city's plan will cost \$1.8 billion in 2005 dollars and will be implemented over the next 20 years. It will:

- Reduce sewage in our streams by capturing and treating 97 percent of the stormwater and sewage along Fall Creek and 95 percent along White River and other waterways in a typical year.
- Reduce overflow frequency from 45-80 storms per year to 0-10 storms, depending upon weather conditions. Overflows are expected to occur two storms per year on Fall Creek and four storms per year on White River and other waterways in a typical year.
- Make streams healthier for people and safer for fish
- Reduce odors and capture toilet paper, sanitary items and other unsightly materials found in overflowing sewers
- Minimize impacts on neighborhoods and businesses by locating most overflow storage facilities deep underground

In October 2004, the city sought public input on the final options for reducing raw sewage overflows. The city adopted the recommendations of these residents, as well as its Clean Stream Team Advisory Committee.



This map illustrates the city's plan to reduce raw sewage overflows. The plan involves building new sewer "interceptors," the main arteries of the sewer system. It also will involve underground storage tanks and tunnels, improvements at the treatment plants and sewer separation in remote areas. For more information, visit our Web site at www.indycleanstreams.org.



Reducing Raw Sewage Overflows into White River

THE PROBLEM

The history of Indianapolis is inherently linked to the White River. In 1820, pioneer John McCormick built his cabin at the confluence of the White River and Fall Creek. It was in his cabin that the first county commissioners chose Indianapolis to be the state capital.

In at least the past century, swimming, wading or eating fish from the White River have not been safe recreational activities. Although water quality has improved through better wastewater treatment, studies show the White River continues to suffer from high levels of *E. coli* bacteria, especially during wet weather.

E. coli comes from a number of sources, including:

- Raw sewage overflows from Indianapolis's antiquated combined sewer system.
- Partially treated wet-weather overflows at wastewater treatment plants.
- Urban stormwater runoff contaminated by failing septic systems, illegal connections to storm drains and waste from pets and wildlife.
- Pollution sources upstream of Marion County, including stormwater and agricultural runoff.



will be pumped to the wastewater treatment plants for treatment.

- Upgrades to an existing storage/treatment facility at Riviera Club to capture and store overflows from upper White River.
- An underground storage tank completed in 2004 along White River near the campus of Indiana University-Purdue University at Indianapolis. Stored sewage is pumped to the treatment plants after rainfall, and the tank has an automatic self-cleaning system.
- Inflatable dams and pinch valves at key points in the sewer system. These devices help save money by using existing sewer lines to contain and reduce raw sewage overflows. The city has already installed several of these devices.
- Major improvements to Belmont and Southport Advanced Wastewater Treatment Plants to dramatically increase their ability to store and treat incoming flows during wet weather.
- A new sewer pipe connecting the two treatment plants, enabling the city to better manage and treat flows during wet weather.

THE SOLUTION

Over the next 20 years Indianapolis will implement a long-term plan to reduce sewer overflows, the largest investment in clean water in the city's history. The plans for White River include:

- A deep underground tunnel along Fall Creek and White River that will store and carry sewage to the city's wastewater treatment plants. The tunnel will be built several hundred feet below the ground surface to store overflows during rainfall. After the rainfall has passed, wastewater in the tunnel

A map of the White River plan is shown in Figure 1(over).

ADDITIONAL WATERSHED IMPROVEMENTS

The city also plans to replace failing septic systems, restore stream banks to more natural conditions, augment water levels during dry weather and improve dissolved oxygen levels through aeration systems, such as fountains.

BENEFITS

The city's goal is to protect people when they are most likely to be using our waterways. Our plan will capture 95 percent of wet-weather sewer flows in a typical year – reducing overflows into White River from 60 storms per year to four, on average.

We will have fewer overflows during dry years and more during wet years. However, even when overflows do occur, swimming and wading won't be safe due to high flows in the river. Citywide, the plan's estimated cost is more than \$1.8 billion in 2005 dollars. It will be implemented over 20 years.

Other benefits include:

- Reducing odors and unsightly sanitary waste floating in the river.
- Supporting fish and other aquatic wildlife by improving dissolved oxygen levels.
- Reducing *E. coli* bacteria and other dangerous pathogens.
- Increasing sewer capacity for growing residential and business needs.
- Improving the environment and quality of life in Indianapolis neighborhoods.

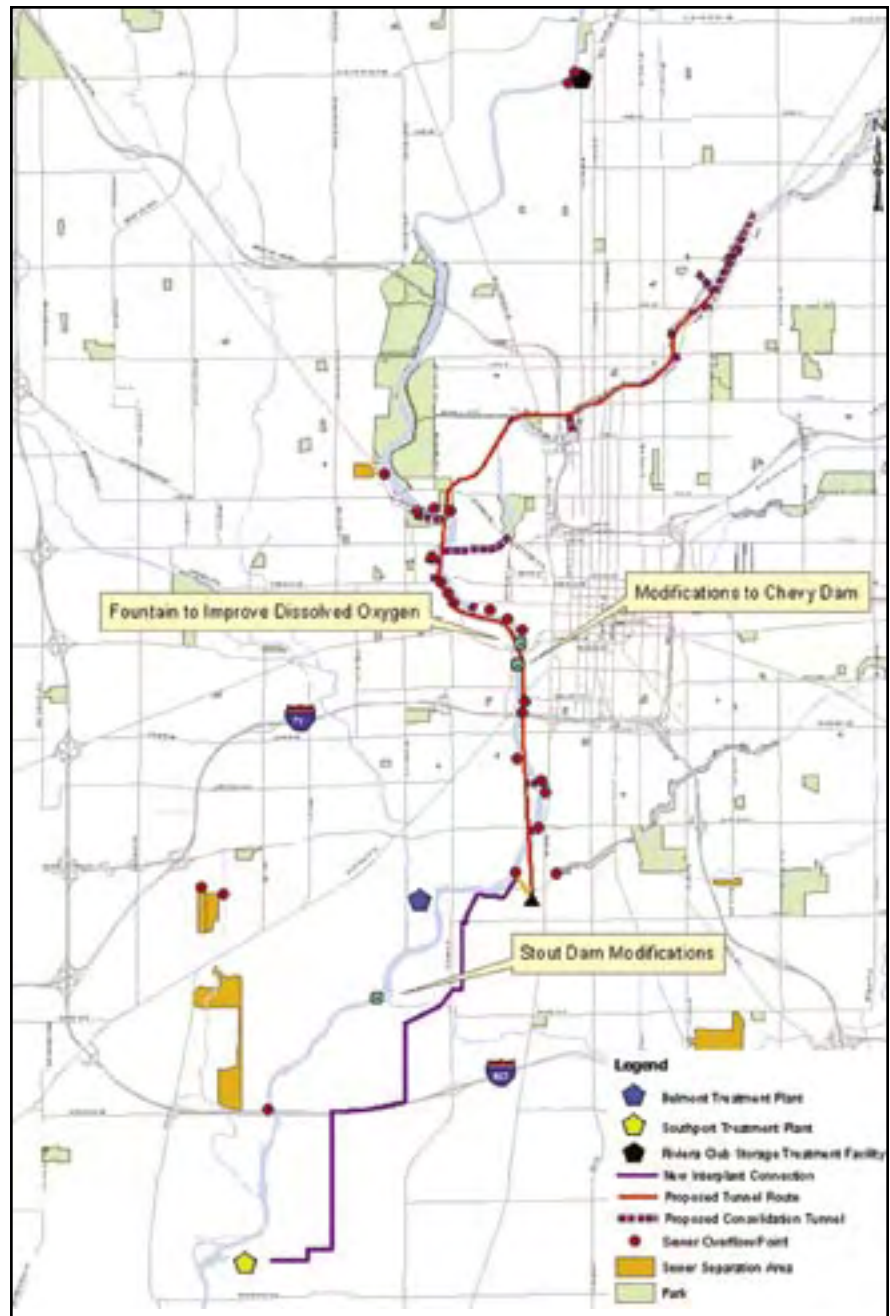


Figure 1



Reducing Raw Sewage Overflows into Fall Creek

THE PROBLEM

Fall Creek begins as a rural stream traveling through Henry, Madison and Hamilton counties. In Hamilton County, Fall Creek flows into Geist Reservoir. South of the reservoir, Fall Creek runs through northeastern Marion County until it meets the White River near 10th Street. Fall Creek flows past the state fairgrounds and several city parks.

For at least a century, raw sewage and other pollution sources have tainted Fall Creek. It is unsafe to swim or wade in the creek due to high levels of *E. coli* bacteria, especially after it rains. Sludge deposits from raw sewage overflows and low stream flows during the summer compound the problem, creating offensive odors and unsightly debris deposited along the creek banks. Low water levels also contribute to low dissolved oxygen levels. Fish need dissolved oxygen to breathe.

Contamination sources include:

- Raw sewage overflows from Indianapolis's antiquated combined sewer system.
- Failing septic systems in upstream areas.
- Urban stormwater runoff contaminated by illegal connections to storm drains and waste from pets and wildlife.

Water samples collected between January 2000 and December 2002 demonstrate that Fall Creek exceeds the Indiana water quality standard for *E. coli* bacteria 27-50 percent of the time, depending on where samples are taken.

THE SOLUTION

Over the next 20 years Indianapolis will implement a long-term plan to reduce raw sewage overflows, the largest investment in clean water in the city's history.



The plans for Fall Creek include:

- Digging a deep underground tunnel along Fall Creek and White River that will store and carry sewage to the city's wastewater treatment plants. The tunnel will be built several hundred feet below the ground surface to store overflows during a storm. After the storm has passed, wastewater in the tunnel will be pumped to the wastewater treatment plants. The Fall Creek tunnel will begin near 34th Street and Sutherland Avenue and will run generally parallel to the creek.
- Building new, larger sewers to capture overflows and carry them to the tunnel.
- Installing inflatable dams and a sluice gate at key points in the sewer system. These devices help save money by using existing sewer lines to contain and reduce raw sewage overflows. Four of these dams have already been installed along Fall Creek.
- Separating sewers in a neighborhood near 38th Street and Sherman Avenue.
- Removing the dam near Dr. Martin Luther King Jr. Street and Fall Creek Parkway to improve water flow within the creek.
- Installing a fountain near the Meridian Street bridge

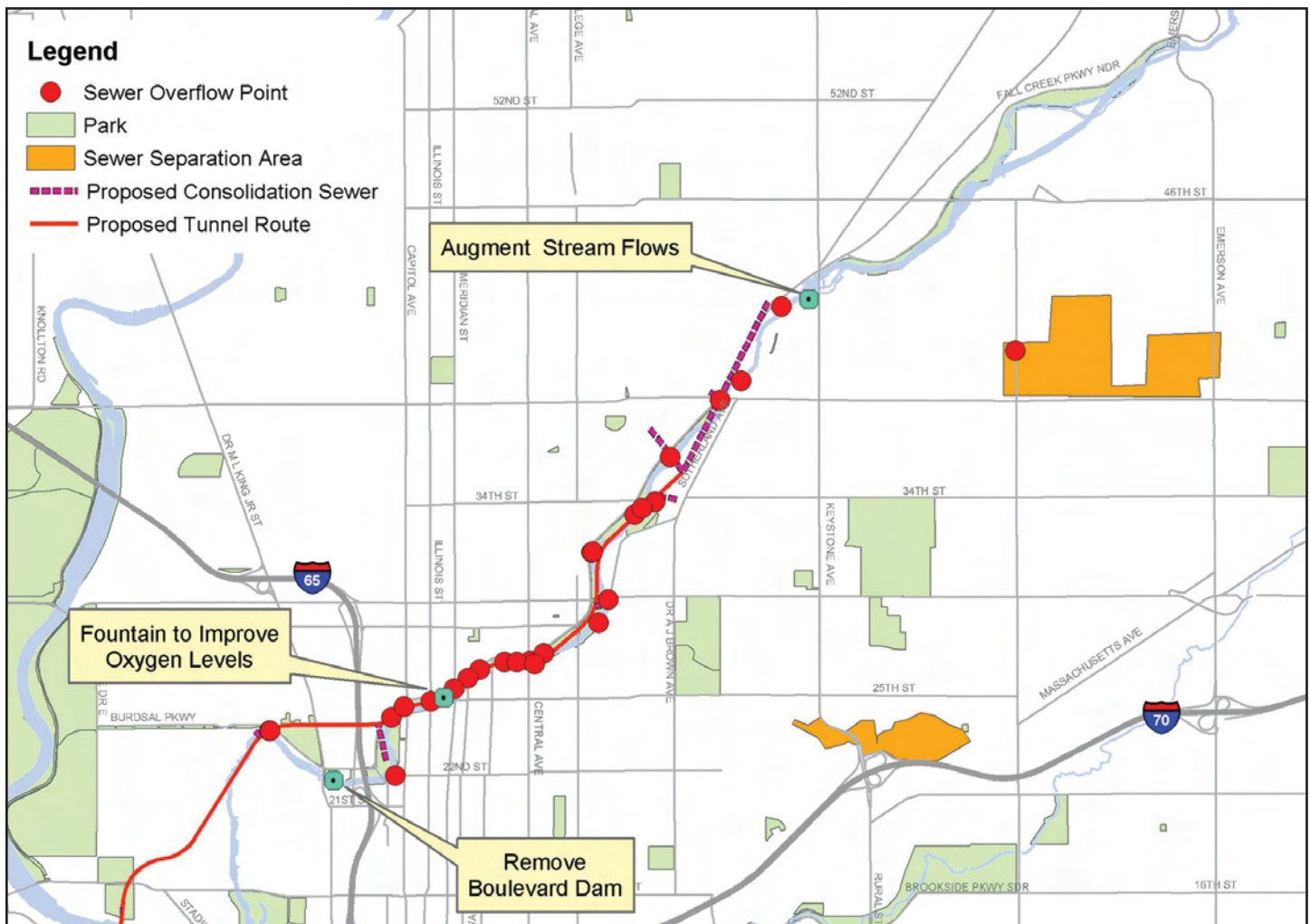


Figure 1

to improve oxygen levels for fish and other aquatic life in the creek during summer months.

- Adding flows to the creek during dry weather.
- Eliminating failing septic systems and restoring stream banks to more natural conditions.

A map of the planned improvements is shown in Figure 1.

BENEFITS

The city's goal is to protect people when they are most likely to be using our waterways. Our plan will capture 97 percent of wet-weather sewer flows in a typical year – reducing overflows into Fall Creek from 60 storms per year to two, on average.

We will have fewer overflows during dry years and more during wet years. However, even when overflows do occur, swimming and wading won't be safe due to high flows in the stream. The plan's estimated cost to address

overflows citywide is more than \$1.8 billion in 2005 dollars. It will be implemented over 20 years.

Other benefits to Fall Creek include:

- Reducing odors and unsightly sanitary waste floating in the creek.
- Reducing *E. coli* bacteria and other dangerous pathogens.
- Supporting fish and other aquatic life by improving the creek ecology.
- Increasing sewer capacity for growing residential and business needs.
- Improving the environment and quality of life in Indianapolis neighborhoods.



Reducing Raw Sewage Overflows into Eagle Creek

THE PROBLEM

Eagle Creek begins as a rural stream that travels through Hamilton, Boone and Marion counties. In Marion County, Eagle Creek flows into Eagle Creek Reservoir, then flows southeast through Indianapolis and Speedway until it meets with White River near Troy Avenue and Harding Street.

The 1,400-acre reservoir in Eagle Creek Park is a valuable recreational asset with good water quality that is safe for swimming. However, downstream of the reservoir, Eagle Creek is contaminated by high levels of *E. coli* bacteria, which makes the creek unsafe for swimming or wading. Many neighborhoods along the creek lack public swimming pools or safer places to cool off during hot summer months.

Contamination sources include:

- Raw sewage overflows between Michigan Street and Raymond Street from Indianapolis's antiquated combined sewer system.
- Failing septic systems in upstream neighborhoods.
- Urban stormwater runoff contaminated by illegal connections to storm drains and waste from pets and wildlife.

Water samples collected between January 2000 and December 2002 demonstrate that Eagle Creek exceeds the Indiana water quality standard for *E. coli* bacteria 14-59 percent of the time, depending on where samples are taken.

THE SOLUTION

Over the next 20 years Indianapolis will reduce raw sewage overflows by implementing a long-term plan, the largest investment in clean water in the city's history.



The plans for Eagle Creek include:

- Building a new main sewer artery, called a collection interceptor, to capture sewer overflows and carry them to the Belmont Advanced Wastewater Treatment plant.
- Building a new Belmont West Cutoff Interceptor to divert flow from the Belmont North and Belmont West interceptors.
- Improving stream flows during dry weather.
- Eliminating failing septic tanks and restoring stream banks to more natural conditions.

A map of the planned improvements is shown in Figure 1 (over).

BENEFITS

The city's goal is to protect people when they are most likely to be using our waterways. Our plan will capture 95 percent of wet-weather sewer flows in a typical year – reducing overflows on Eagle Creek from 60 storms per year to four in a typical year.

Eagle Creek will have fewer overflows during dry years and more during wet years. However, when overflows do occur,

swimming and wading won't be safe due to high water flows in the stream. The plan's estimated cost to address overflows citywide is more than \$1.8 billion in 2005 dollars. It will be implemented over 20 years.

Other benefits include:

- Reducing odors and unsightly sanitary waste floating in the creek.
- Reducing *E. coli* bacteria and other dangerous pathogens.
- Supporting fish and other aquatic life by repairing the creek ecology.
- Increasing sewer capacity for growing residential and business needs.
- Improving the environment and quality of life in Indianapolis neighborhoods.

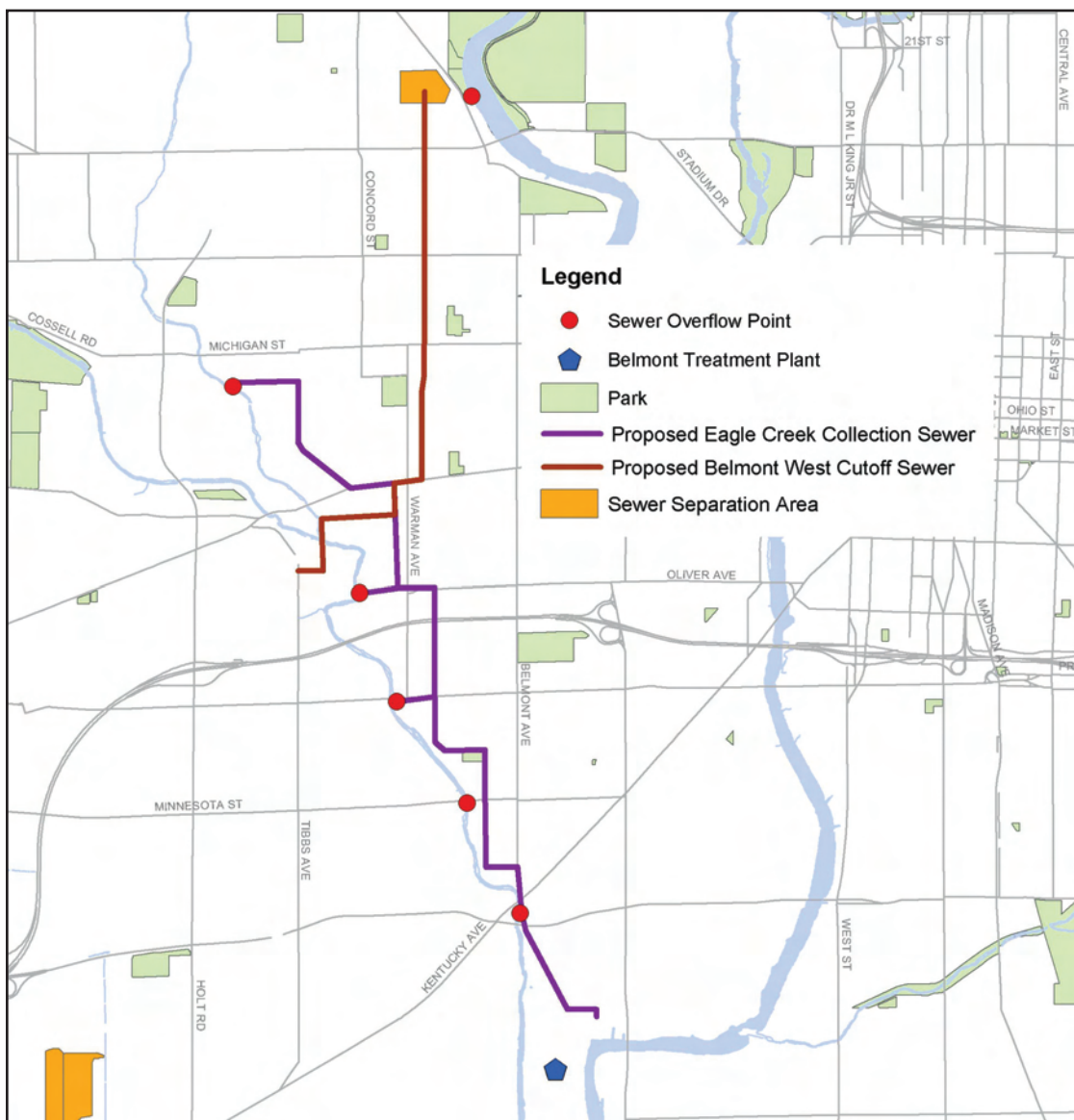


Figure 1



Reducing Raw Sewage Overflows into Pleasant Run and Bean Creek

THE PROBLEM

Pleasant Run and Bean Creek are urban streams on the east and southeast side of Indianapolis. Pleasant Run starts near 30th Street and Shadeland Avenue and flows through Pleasant Run Golf Course and Ellenberger, Christian and Garfield parks. In Garfield Park, Bean Creek also flows into Pleasant Run. Bikers, walkers, runners and skaters use trails along the Pleasant Run Greenway.

About 50 percent of Pleasant Run flows through urban and industrial areas with little or no public access. Pleasant Run enters the White River about a half mile southwest of Holy Cross and St. Joseph Cemeteries near Bluff Road.

Pleasant Run and Bean Creek are contaminated by a number of pollution sources, including:

- Raw sewage overflows from Indianapolis's antiquated combined sewer system.
- Failing septic systems in upstream areas.
- Urban stormwater runoff contaminated by illegal connections to storm drains and waste from pets and wildlife.

Water samples collected between January 2000 and December 2002 demonstrate that Pleasant Run and Bean Creek exceed the Indiana water quality standard for *E. coli* bacteria 59-71 percent of the time.

THE SOLUTION

Over the next 20 years Indianapolis will reduce raw sewage overflows by implementing a long-term plan, the largest investment in clean water in the city's history.



The plans for Pleasant Run include:

- Building new sewer arteries, called collection interceptors, to capture sewer overflows along Pleasant Run and Bean Creek and carry them to a new deep storage tunnel.
- Separating sewers on the upstream end of Bean Creek, eliminating sewage overflows from one location.
- Installing inflatable dams to hold back sewage at Ellenberger Park and Howe Academy Middle School. (This project has been completed.)
- Installing netting in the sewer system to capture toilet paper and other solids and prevent them from overflowing into parts of Garfield Park. (This project has been completed.)
- Improving stream flows during dry weather.
- Eliminating failing septic tanks and restoring stream banks to more natural conditions.

A map of the planned improvements is shown in Figure 1 (over).

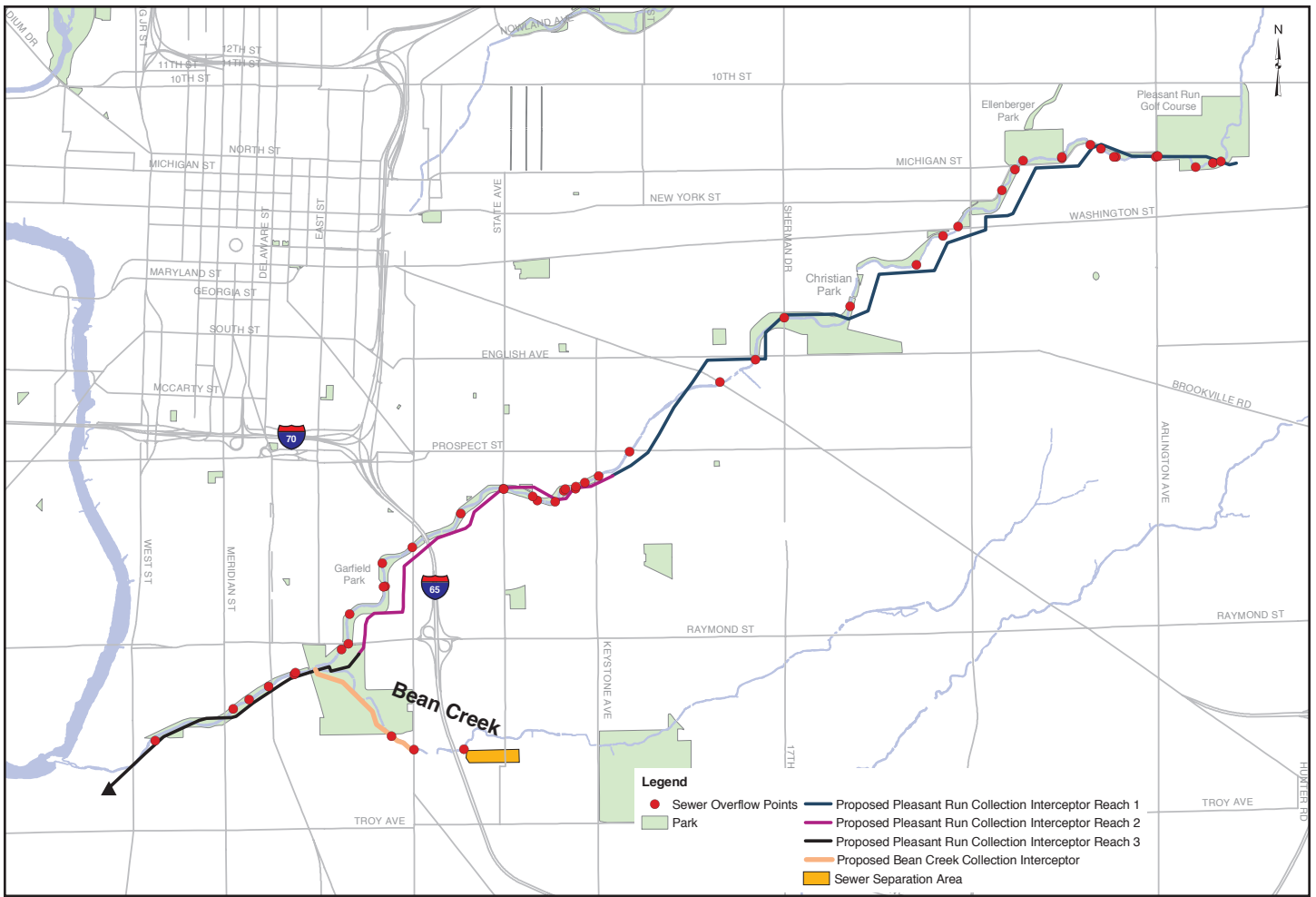


Figure 1

BENEFITS

The city's goal is to protect people when they are most likely to be using our waterways. Our plan will capture 95 percent of wet-weather sewer flows in a typical year – reducing overflows into Pleasant Run and Bean Creek from 60 storms per year to four, on average.

We will have fewer overflows during dry years and more during wet years. However, even when overflows do occur, swimming and wading won't be safe due to high flows in the stream. The plan's estimated cost to address overflows citywide is more than \$1.8 billion in 2005 dollars. It will be implemented over 20 years.

Other benefits to Pleasant Run and Bean Creek include:

- Increasing sewer capacity for growing residential and business needs.
- Improving the environment and quality of life in Indianapolis neighborhoods.
- Reducing odors and unsightly sanitary waste floating in the creek.
- Reducing *E. coli* bacteria and other dangerous pathogens.
- Supporting fish and other aquatic life by improving the creek ecology.

Clean Stream Program



Reducing Raw Sewage Overflows into Pogues Run

THE PROBLEM

Pogues Run is an urban stream that runs through the east-side of Indianapolis. In the 1800s the banks of Pogues Run hosted the first Indianapolis settlement.

Today Pogues Run flows through three city parks—Forest Manor, Brookside and Spades—and near four public schools—Theodore Potter Elementary, Horizon Alternative Middle, Harshman Middle and Arsenal Tech High School. The Pogues Run Greenway trail goes through some of the city's oldest neighborhoods, including Woodruff Place and Cottage Home. When it nears downtown at New York Street, Pogues Run enters a two-barrel, concrete tunnel built in 1914-15.

Studies show Pogues Run is contaminated by a number of pollution sources, including:

- Raw sewage overflows from Indianapolis's antiquated combined sewer system.
- Failing septic systems in upstream areas.
- Urban stormwater runoff contaminated by illegal connections to storm drains and waste from pets and wildlife.

Water samples collected between January 2000 and December 2002 demonstrate that Pogues Run exceeds the Indiana water quality standard for *E. coli* bacteria 65-73 percent of the time.

THE SOLUTION

Over the next 20 years Indianapolis will reduce raw sewage overflows by implementing a long-term plan, the largest investment in clean water in the city's history.



The plans for Pogues Run include:

- Rerouting overflows away from the four IPS schools and into the underground Pogues Run Tunnel, which will be retrofitted to transport and store overflows during wet weather.
- Installing an inflatable dam in the sewer to hold back and reduce overflows into Brookside Park. (This project has been completed.)
- Separating sewers near 21st Street and Emerson Avenue to eliminate overflows into Forest Manor Park.
- Building an underground storage tank and treatment facility near Spades Park to store flows from nine outfalls in Forest Manor, Brookside and Spades parks. The facility will temporarily store sewage during a storm, then pump wastewater through existing pipes to the treatment plant after the storm subsides.
- Eliminating failing septic tanks and restoring stream banks to more natural conditions.

A map of the planned improvements is shown in Figure 1 (over).

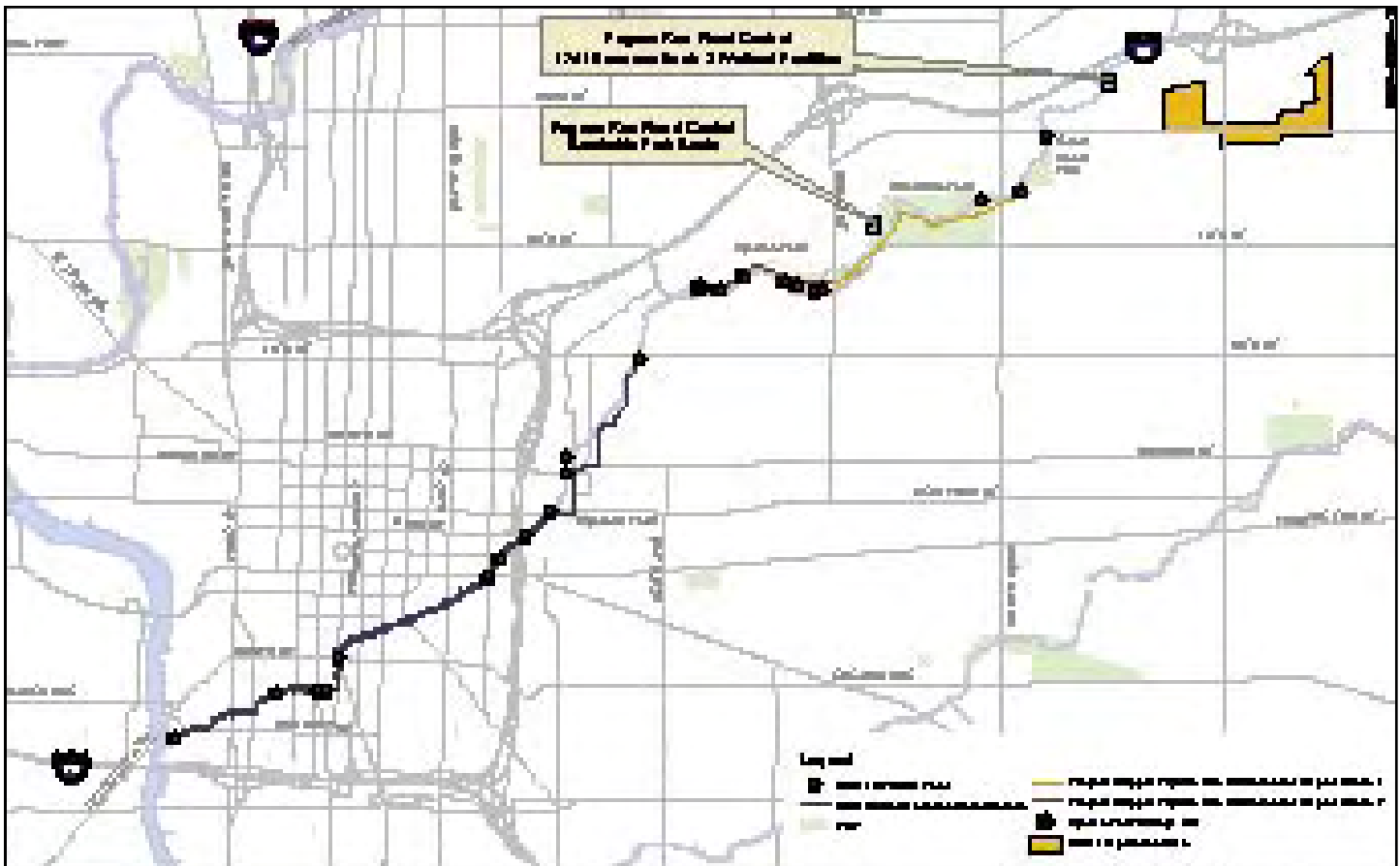


Figure 1

BENEFITS

The city's goal is to protect people when they are most likely to be using our waterways. Our plan will capture 95 percent of wet-weather sewer flows in a typical year – reducing overflows on Pogues Run from 60 storms per year to four, on average.

Pogues Run will have fewer sewer overflows during dry years and more during wet years. However, even when overflows do occur, swimming and wading won't be safe due to high flows in the stream. The plan's estimated cost to address overflows citywide is more than \$1.8 billion in 2005 dollars. It will be implemented over 20 years.

Other benefits to Pogues Run include:

- Reducing odors and unsightly sanitary waste floating in the creek.
- Reducing *E. coli* bacteria and other dangerous pathogens.
- Supporting fish and other aquatic life by improving the creek ecology.

- Increasing sewer capacity for growing residential and business needs.
- Improving the environment and quality of life in Indianapolis neighborhoods.



Raw Sewage Overflow Long-term Control Plan Frequently Asked Questions

The Plan

Q. What is the long-term control plan (LTCP)?

A. The long-term control plan sets out the city's 20-year plan to improve the sewer system and reduce raw sewage overflowing into our streams and neighborhoods. The plan was developed with the involvement of businesses, neighborhood groups and interested citizens – and it has received bipartisan support from the City-County Council. It is based upon years of stream monitoring, treatment analysis and sewer studies. The plan will require more than 100 individual construction projects to bring our sewer system to 21st century standards.

Q. When will the projects be done?

A. The plan will be implemented in four five-year phases, with all projects complete by December 31, 2025. At least 20 years are needed for construction to minimize disturbance to neighborhoods; accurately evaluate the effectiveness of each project; secure rights of way; coordinate technical, manpower and material needs; and manage the financial burden on ratepayers.

Q. How will the plan reduce raw sewage overflows to our streams?

A. The city's plan will protect public health and improve the quality of life in many neighborhoods now suffering from the sight and stench of raw sewage. It will involve building new tunnels, storage tanks, larger sewers and sewage treatment facilities in order to:

- Reduce overflow frequency from 45-80 storms per year to 0-10 storms; actual overflow frequency will depend on how much it rains or snows each year.
- In year with average rainfall, the plan is expected to capture and treat 97 percent of wet-weather flow in the sewers along Fall Creek and 95 percent along White River and other streams. We expect sewer overflows to occur twice in a typical year on Fall Creek and four times in a typical year on other waterways.
- Make streams safer for fish, reduce odors, and capture toilet paper, sanitary waste and other unsightly materials found in overflowing sewers.
- Minimize impacts on neighborhoods and businesses by locating most overflow storage facilities deep underground.

Q. Is this plan required?

A. Yes. Both the federal Clean Water Act and state law require cities with combined sewer systems to develop long-term plans to reduce and control sewage overflows. The plan must be approved by the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management.

Q. What is the difference between the plan released in 2001 and this plan?

A. This plan has been revised, expanded and updated since 2001 to respond to comments and requirements imposed by the U.S. EPA and IDEM. The city's 2001 plan was based upon 85 percent capture of sewage during wet weather and approximately 12 overflow events in an average year at a cost of \$1.1 billion. The revised plan will capture 95-97 percent of sewage

during wet weather, resulting in overflows during approximately 2-4 storms in an average year. The revised plan has an estimated cost of \$1.8 billion in 2005 dollars.

Q. What options did the city consider when developing the plan?

A. The city considered a wide variety of options, including storing overflows for later treatment, separating the combined sewers and treating overflows where they occur along the streams. For more information on the city's analysis of raw sewage overflow alternatives, visit our web site at www.indycleanstreams.org and click on "The Solutions" tab.

Q. When will you start to fix this problem?

A. We have already begun. The City of Indianapolis has already invested more than \$200 million to keep raw sewage out of our waterways, especially near parks, schools and neighborhood streams. Already, we've reduced annual overflows by more than 145 million gallons.

The Need

Q. Why do we have raw sewage spilling into our streams?

A. Indianapolis' sewer system is antiquated and can no longer handle the amount of sewage and rainwater that flows through it. During dry weather, sewage flows safely through the sewers to our wastewater treatment plants. However, as little as a quarter-inch of rain causes raw sewage to overflow into our streams. The sewers were built this way 80-100 years ago before there were wastewater treatment plants. This was common practice in many U.S. cities, especially in the Northeast and Midwest.

Q. Why were our sewers built this way?

A. More than 100 years ago, Indianapolis built a sewer system to carry rainwater and melting snow away from homes, businesses and streets. This was standard practice at the time. When indoor plumbing came later, homeowners and business owners hooked their sewage lines to the storm sewers, combining stormwater and sewage in one pipe. During dry weather, the combined sewers carry sewage to the city's treatment plants. However, when it rains or snow melts, the sewers can be overloaded with incoming stormwater. When this happens, the sewers are designed to overflow into nearby streams and rivers. If they didn't have this escape valve, raw sewage would back up into people's basements and streets. Today, we build separate sewers for stormwater and sewage.

Q. What are the harmful effects of raw sewage overflows?

A. Raw sewage in our streams is a health hazard, smells and looks disgusting, hurts our environment and harms the quality of life in our neighborhoods. Sewage overflows are a major cause of pollution in White River, Fall Creek, Pleasant Run, Pogues Run and Eagle Creek.

Plan Funding

Q. How much does the long-term control plan cost?

A. The cost of construction and operations/maintenance over 20 years is estimated at \$1.8 billion in 2005 dollars.

Q. How is the long-term control plan being funded?

A. Most of the money will come from local sewer user fees, although the city will also pursue state and federal assistance where available. A three-year sewer rate increase was approved by the City-County Council in October 2005. This rate increase is paying for the first three years of the

20-year plan, as well as other needed improvements to the sanitary sewer system and converting neighborhoods from septic tanks to sewers.

Q. Will these be the last rate increases needed to pay for the city's plan?

A. No. Regular sewer rate increases will be required every year for the next 20 years to finance the projects required by the state and federal governments.

Q. How much will sewer bills cost at the end of the 20-year plan?

A. Long-term sewer rates are very difficult to predict because of rapidly changing regulatory requirements and higher-than-average inflation in the construction industry. Current projections show residential sanitary sewer rates in 2025 will be around \$55-60 per month, based upon 2005 dollars. We expect our rates to remain competitive with other Midwestern cities, who face the same requirements to upgrade their sewer infrastructure.

Q. Is all the money that is being collected going to the plan or is it going to other projects?

A. As mentioned above, sewer user fees support sewage collection and treatment projects all over Marion County. These include projects in the long-term control plan, septic tank elimination projects, treatment plant improvements and sanitary sewer expansion. For a list of projects planned in 2006-08, visit our web site at www.indycleanstreams.org and click on the "Projects" tab.

Q. What assistance is available from the state and federal governments?

A. The state and federal governments offer low-interest loan programs for sewer projects. However, funding for those programs has been reduced in recent years. Federal grants, once widely available through a construction grants program, are now only available through Congressional earmarks on federal spending bills. Many local, state and national organizations are working with Congress to create a federal trust fund for clean water infrastructure, much as we now have federal trust funds for highways and airports. To learn more or show your support, visit www.cleanwateramerica.org.

Plan Benefits

Q. What benefits will the long-term control plan provide?

A. The plan will improve the ability of the sewer system to handle rainfall and snowmelt, so sewers would overflow only during large storms. The plan also will dramatically reduce the amount of sewage overflowing into our streams, improve oxygen levels for fish, reduce *E. coli* bacteria levels, and significantly reduce or eliminate odors, untreated sewage and trash in neighborhood streams.

Q. Will the long-term solution completely eliminate all raw sewage overflows?

A. No. In a year with typical rainfall, we expect sewer overflows to occur twice on Fall Creek and four times on other waterways – compared with 63 storms with today's sewer system. Actual frequency will depend on the weather, but only the largest storms will still cause some overflows. During these storms, streams are flowing fast and aren't safe for swimming or wading. The city's goal is to develop an affordable plan that will focus dollars on projects that will do the most to improve water quality and protect public health.

Q. I don't fish or swim in the White River and don't live in the inner city. How does this program benefit me?

A. Under the mayor's Clean Streams-Healthy Neighborhoods plan, projects are planned throughout Marion County, not just in the inner city. In addition to our long-term plan to reduce

sewer overflows, we must extend sanitary sewers to neighborhoods now on septic systems, improve drainage and flood control, upgrade our treatment plants and provide more capacity in our separate sewer system outside the old city limits. Although the sewers are sometimes "out-of-sight, out-of-mind," they are just as important to our city's future as our roads, bridges and highways.

Q. Why are we trying to make the White River swimmable? No one swims in the river and smaller streams aren't deep enough for swimming.

A. Our goal is not to make the White River and other streams swimmable at all times. Our goal is to try to minimize sewer overflows and stormwater impacts during all but the largest storm events in the typical year. Our plan is the most cost-effective way to meet federal requirements and at the same time protect public health. Urban streams are generally not safe for swimming, and the city has educational programs to warn children and adults to the dangers of urban waters during both dry and wet weather conditions.

Q. How will these projects benefit local businesses?

A. The city will work hard to ensure that locally owned and operated businesses will participate in the work, thus keeping dollars in Indianapolis and Central Indiana as much as possible. When local businesses benefit, other local companies that serve those businesses and their employees also will benefit. This plan will allow our city to continue to grow and attract new business opportunities.

Q. How do we know if the plan is working?

A. The city will monitor the effectiveness of the new facilities and programs after construction to make sure projects are working as designed and to verify that we are capturing overflows as required. The city also will prepare reports to regulatory agencies and the public on the plan's progress.

Other Questions

Q. What is happening with other cities on the White River who have sewage overflows?

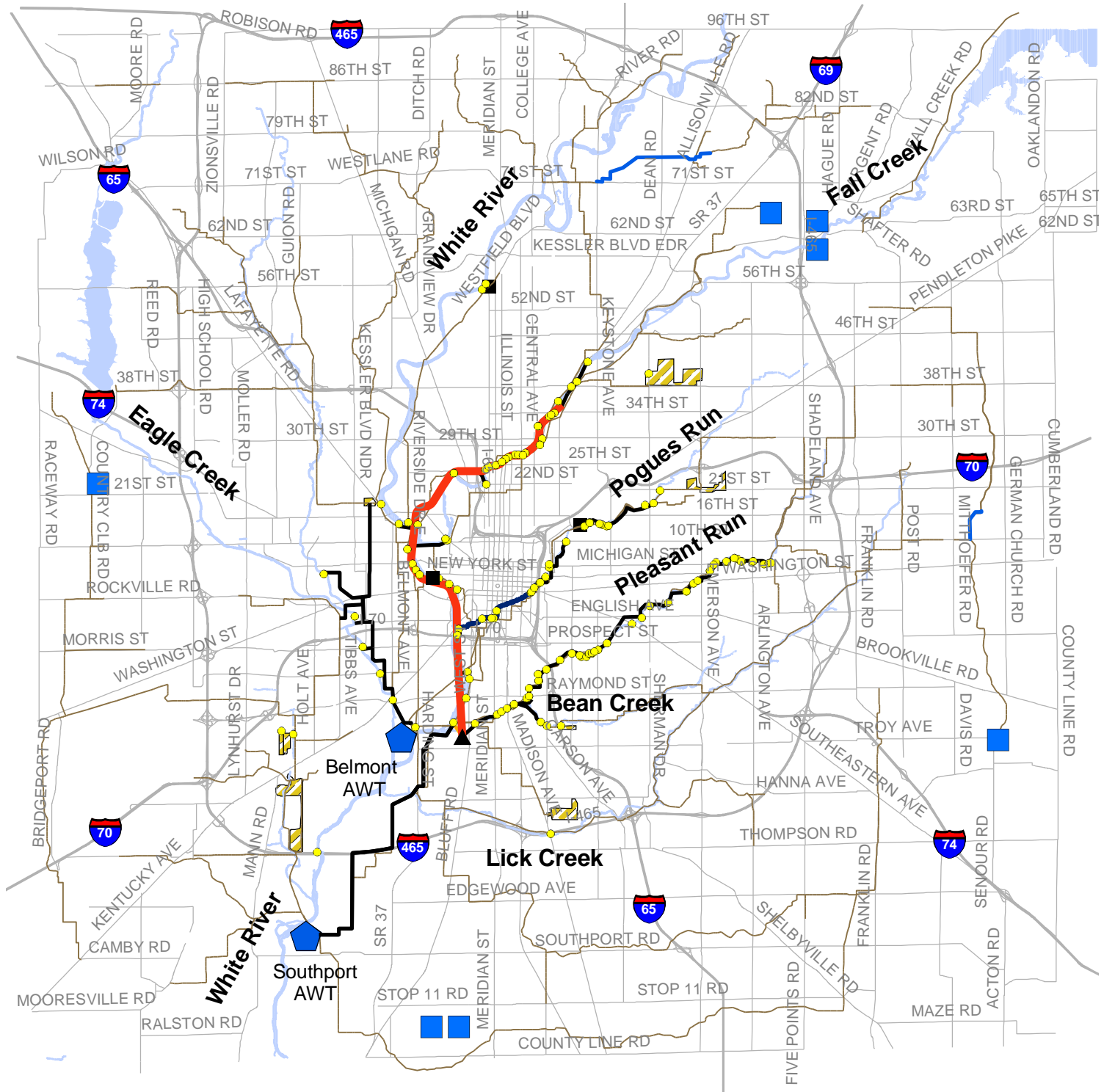
A. Indiana has 105 communities with raw sewage overflows, including several on the White River. The Indiana Department of Environmental Management is responsible for ensuring that these communities are addressing the problem just as Indianapolis is doing.

Q. How can I help improve water quality?

A. You can help by:

- Disconnecting your downspouts and sump pumps if they are connected to the sewer system. The city's Correct Connect program can show you how to disconnect. Learn more at www.indycleanstreams.org.
- Reducing water use, especially during rainy weather
- Coming to a public meeting to learn more about what is being done. Sign up at www.indycleanstreams.org to be notified of upcoming meetings through e-mail
- Inviting Clean Stream Team representatives to make a presentation to your civic association or neighborhood group
- Learning how you can reduce water use in your homes and businesses, and help keep pollution out of the storm drains

20-Year Required Sewer Improvement Projects



- | Existing Infrastructure | Long Term Control Plan Projects |
|--|--|
| <ul style="list-style-type: none"> ● Sewer Overflow Point — Existing Interceptor ■ AWT Plant Location | <ul style="list-style-type: none"> ■ Storage Facility ■ Sewer Separation/Elimination Area ▲ Tunnel Dewatering Pump Station — Tunnel Force Main — Proposed Tunnel Route — Collection Interceptor — Pogues Run Tunnel |

Sanitary Sewer Projects

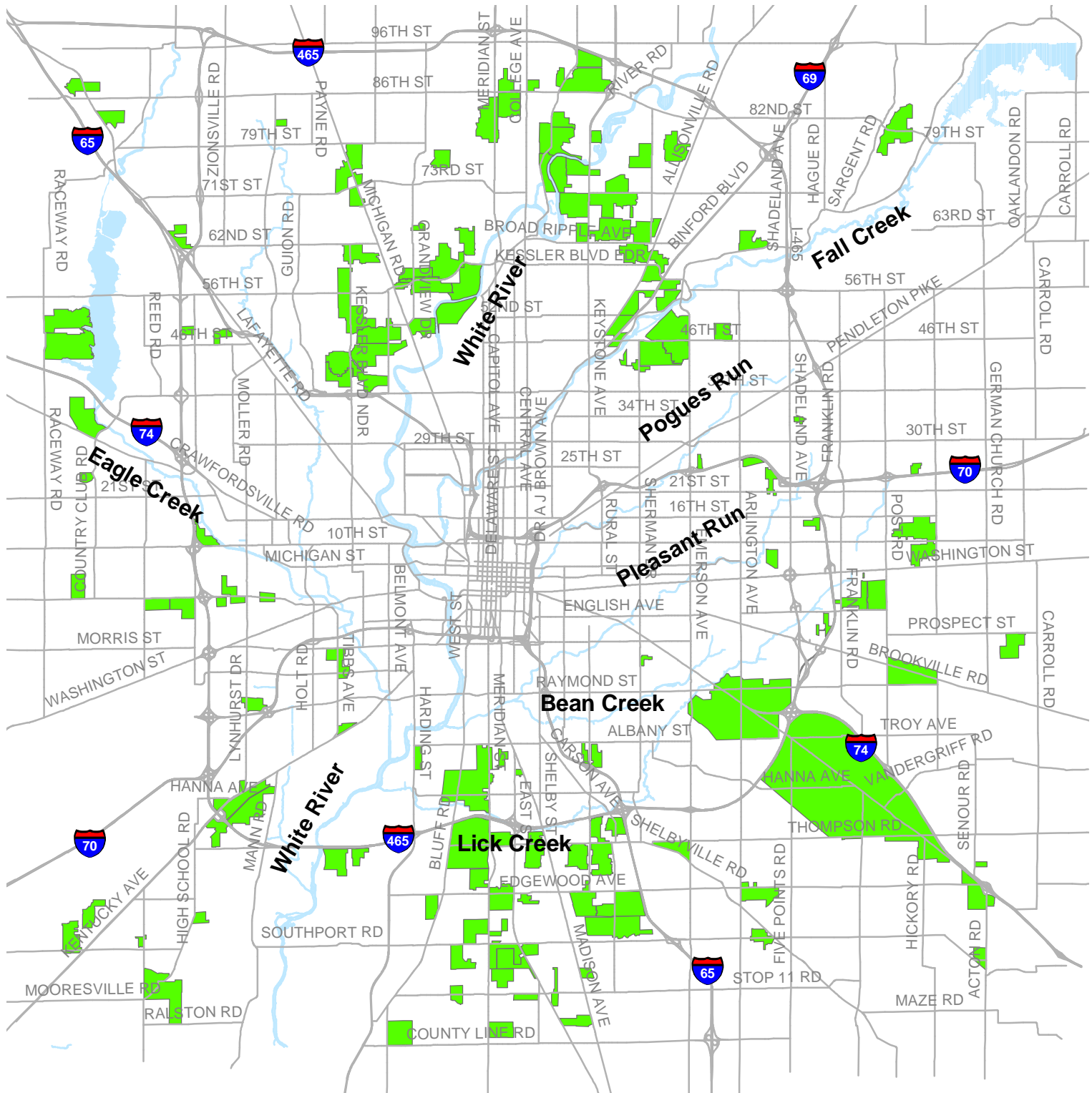
- Lift Station and Rehabilitation Projects
- Interceptor Projects



These major projects represent planning-level information and may be subject to refinement during facility planning and design phases.



20-Year Voluntary Plan to Address Failing Septic Systems

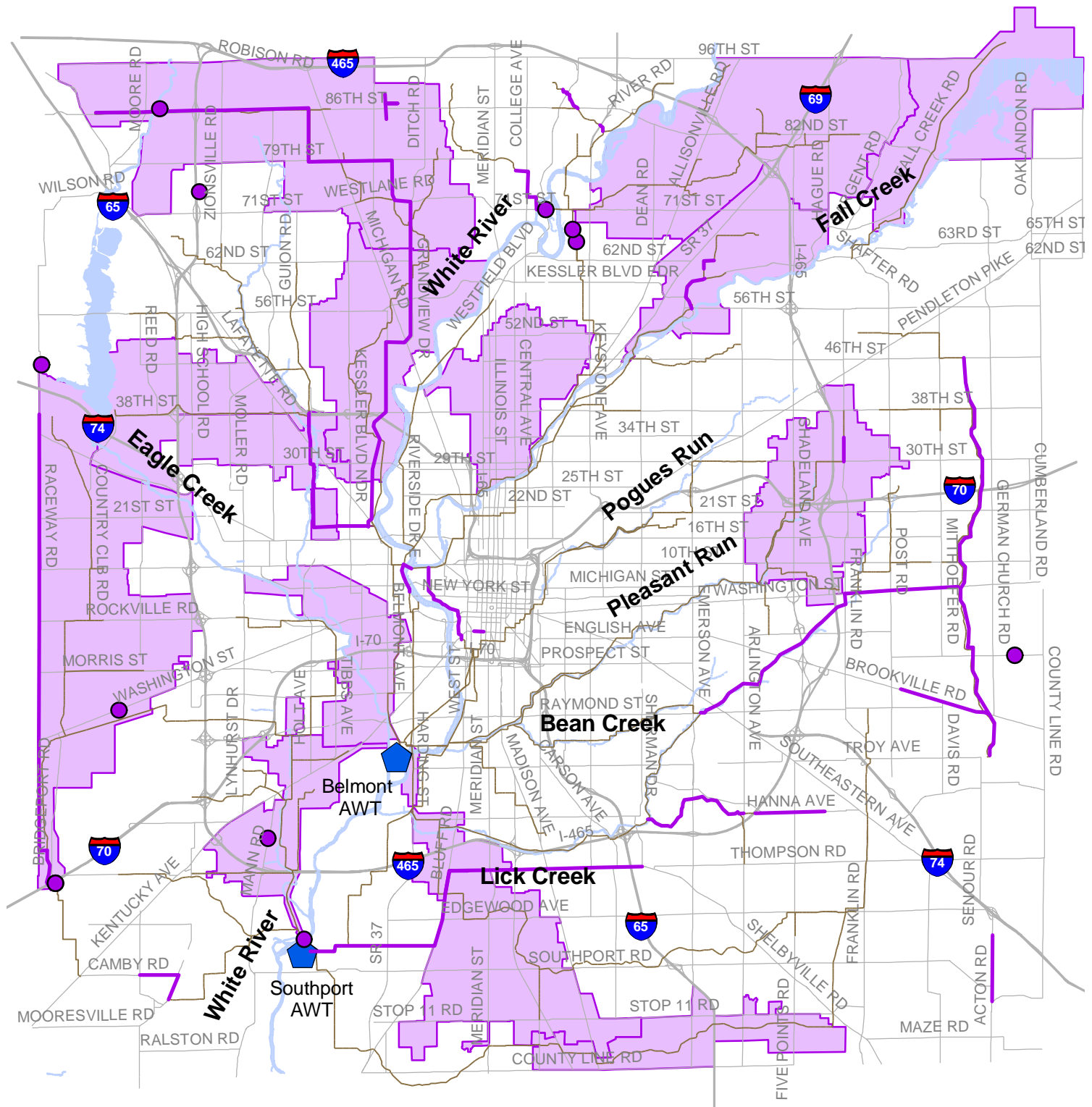


 Septic Tank Elimination Projects thru 2025

These major projects represent planning-level information and may be subject to change during facility planning and design phases.



20-Year Voluntary Sanitary Sewer Improvements

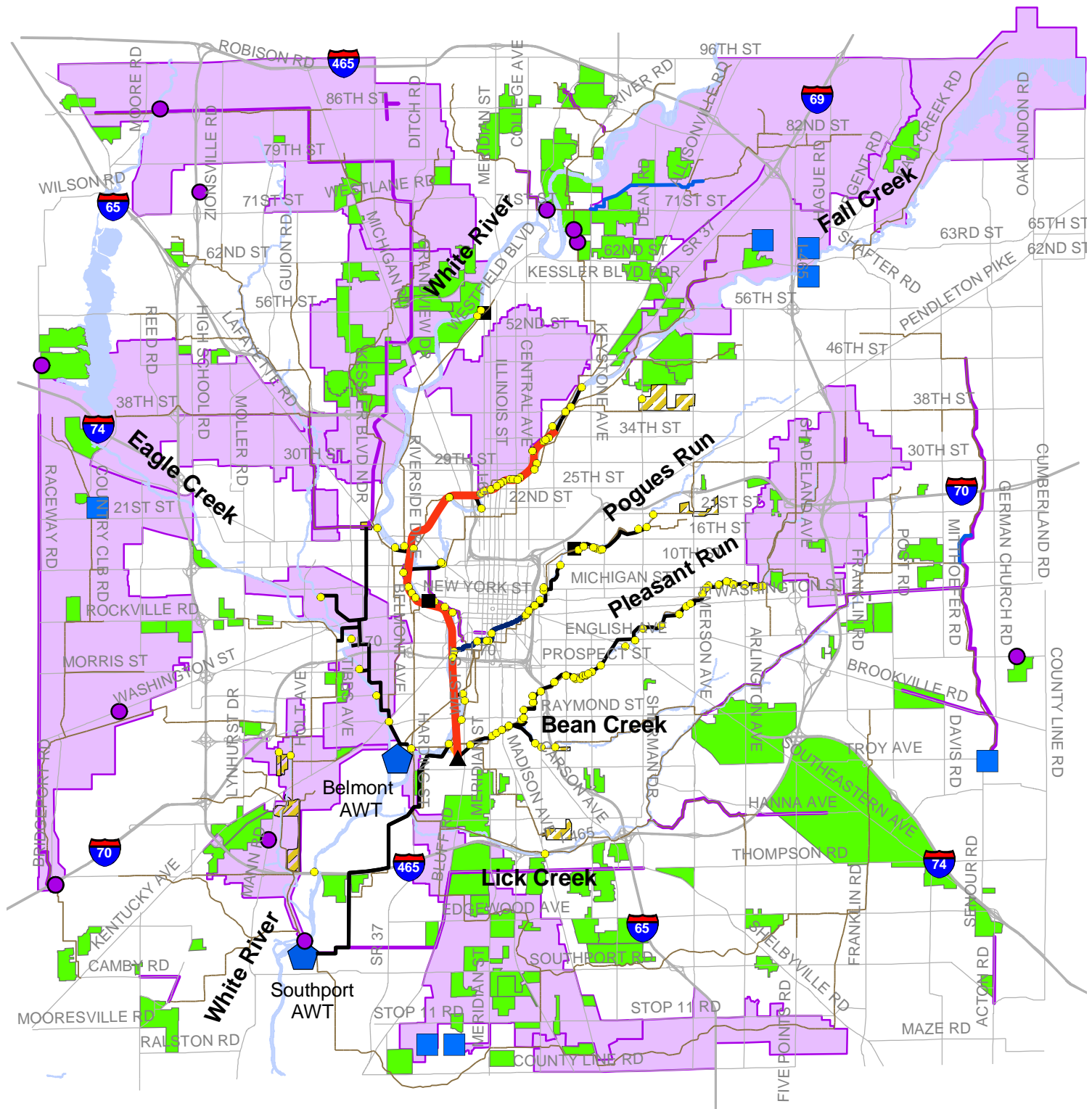


- | | |
|-------------------------|---|
| Existing Infrastructure | Sanitary Sewer Projects thru 2025 |
| — Existing Interceptor | ● Sanitary Lift Station and Rehabilitation Projects |
| ■ AWT Plant Location | — Sanitary Interceptor Projects |
| | ■ Sanitary Basin Rehabilitation Projects |

These projects represent planning-level information and may be subject to refinement during facility planning and design phases.



Clean Streams-Healthy Neighborhoods: 20-Year Sewer Improvement Program



Existing Infrastructure

- Sewer Overflow Point
- Existing Interceptor
- AWT Plant Location

Required Projects

- Storage Facility
- Sewer Separation/Elimination Area
- ▲ Tunnel Dewatering Pump Station
- Tunnel Force Main
- Proposed Tunnel Route
- Collection Interceptor
- Pogues Run Tunnel
- Lift Station and Rehabilitation Projects
- Interceptor Projects

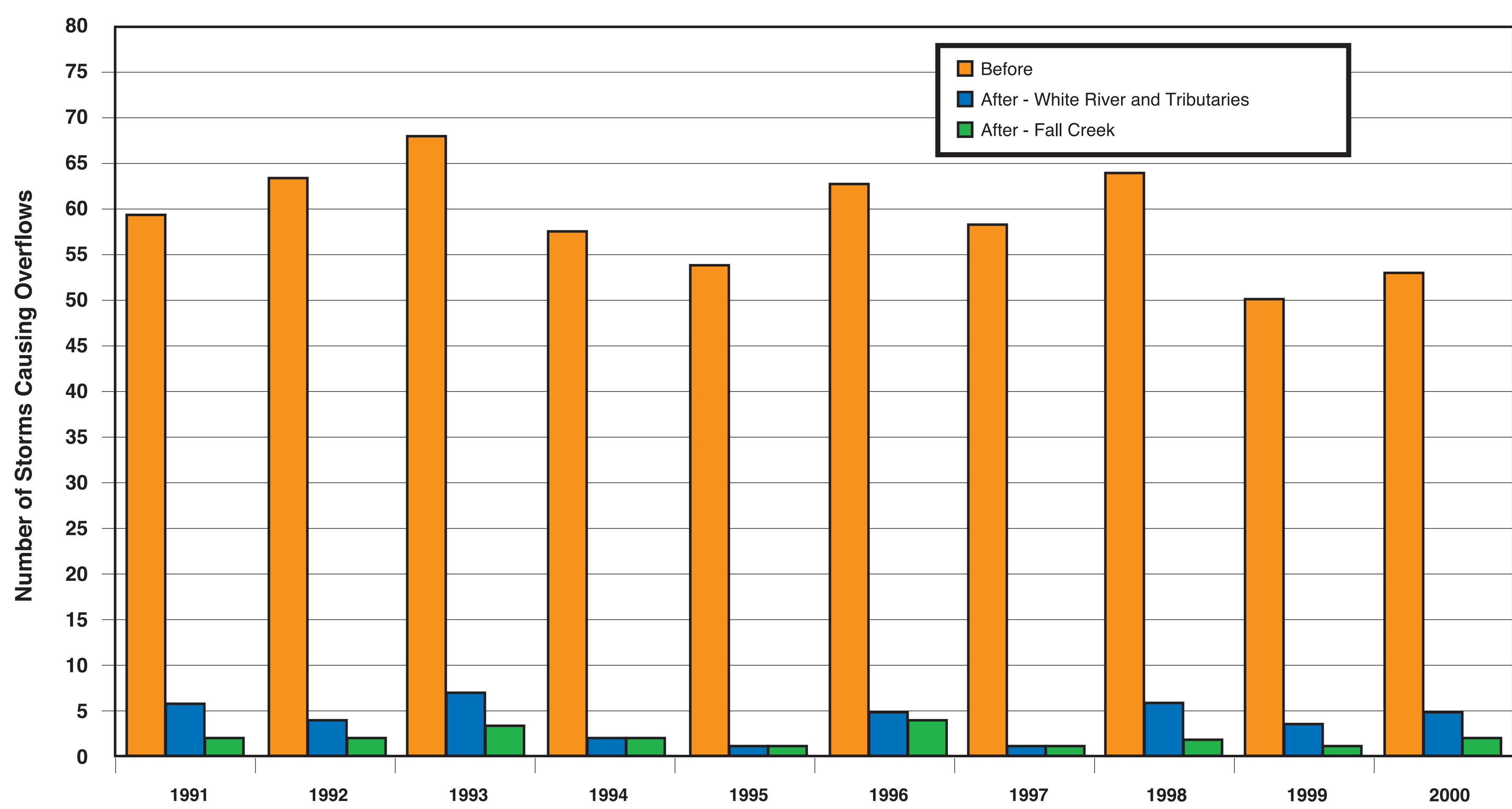
Voluntary Projects

- Lift Station and Rehabilitation Projects
- Interceptor Projects
- Sanitary Basin Rehabilitation Projects
- Septic Tank Elimination Projects

These major projects represent planning-level information and may be subject to refinement during facility planning and design phases.



OVERFLOW FREQUENCY BEFORE AND AFTER PLAN IS IMPLEMENTED

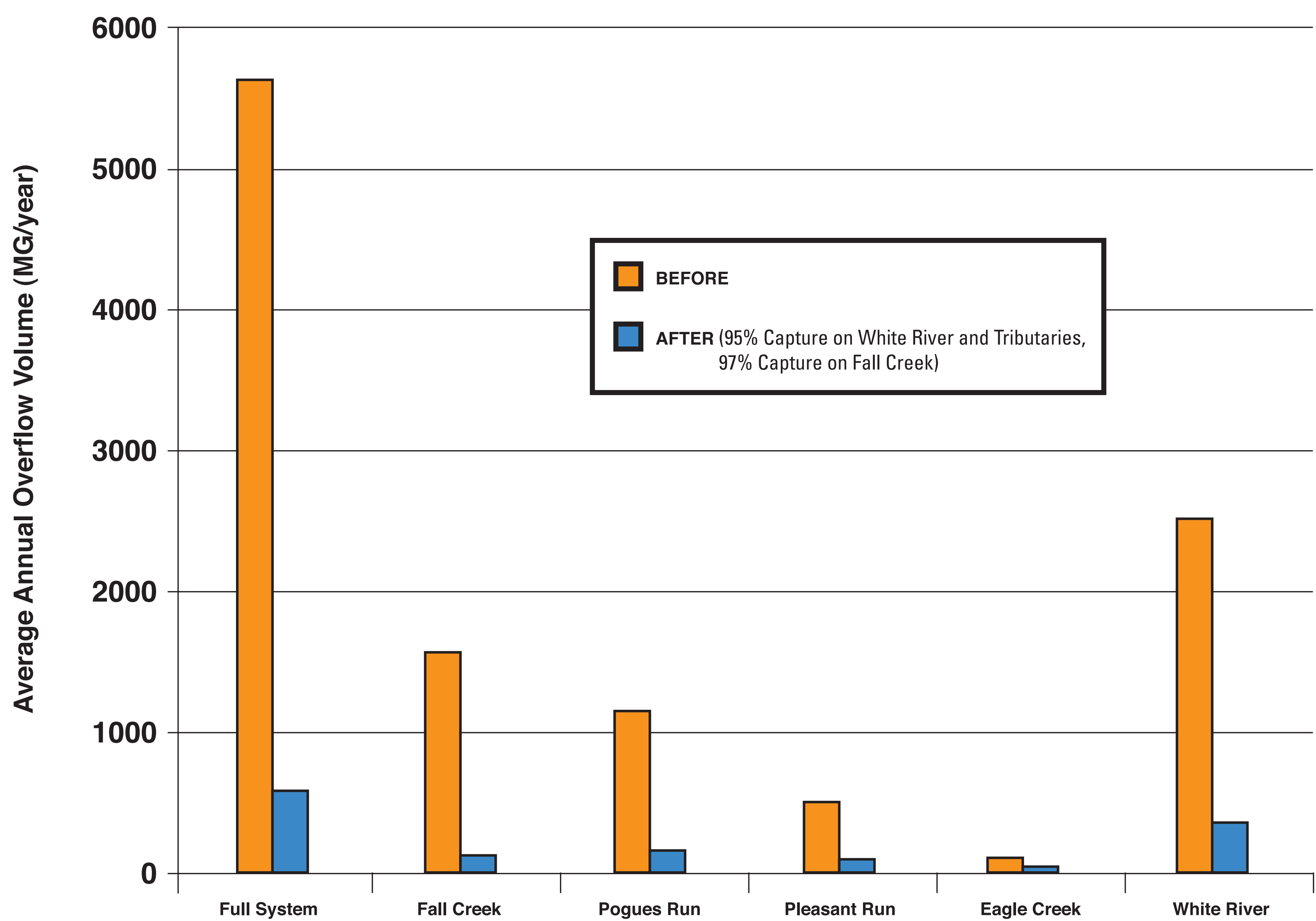


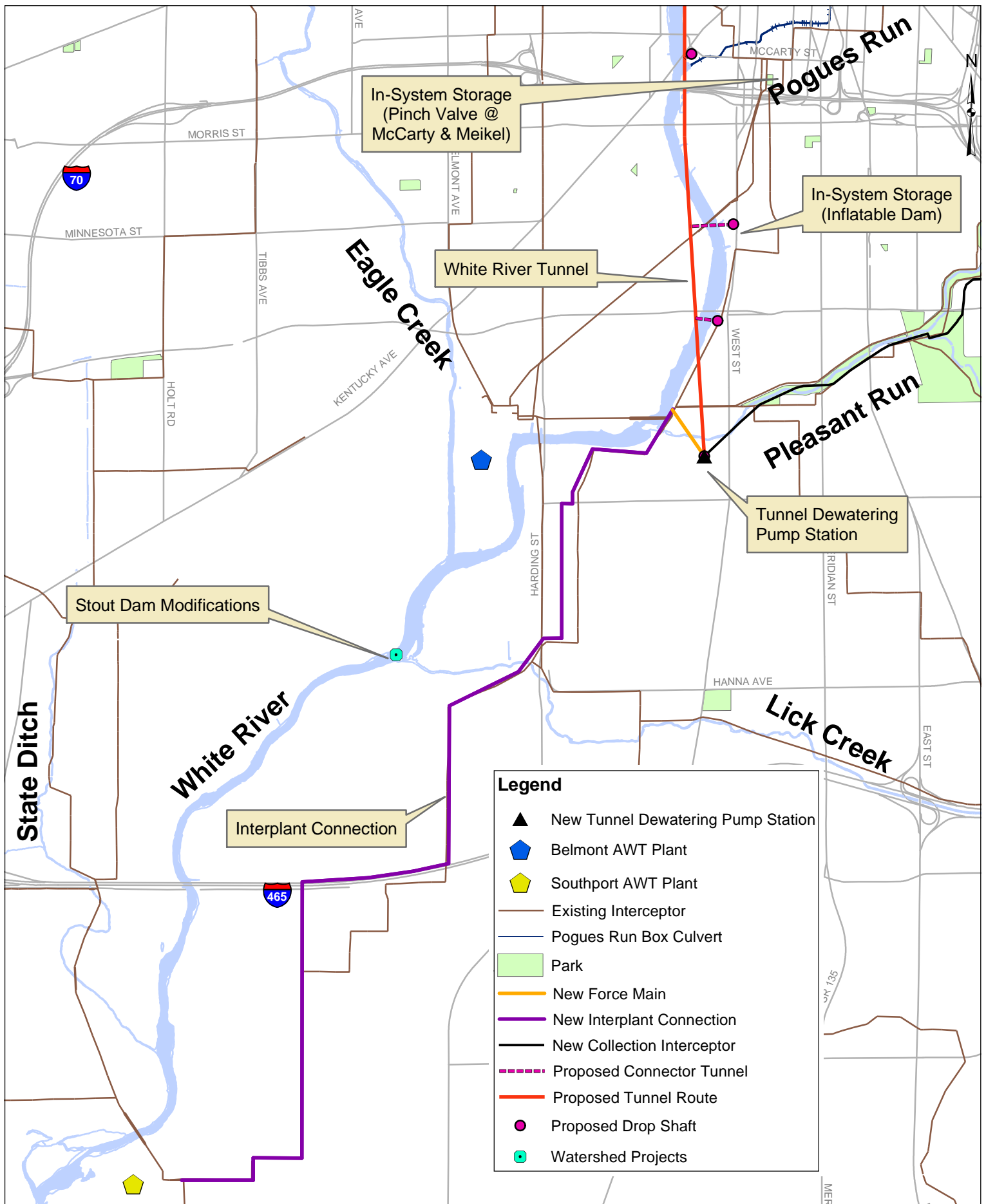
Source: 1950-2003 NetSTORM Simulation. Baseline Conditions and Selected LTCP.

Note: (1) For before conditions, there is an average annual frequency of 60 overflow events per year. The distribution of the 60 events is based on the 54-year precipitation record.
(2) It is estimated that at least one CSO outfall structure would discharge for the listed number of dates each year.



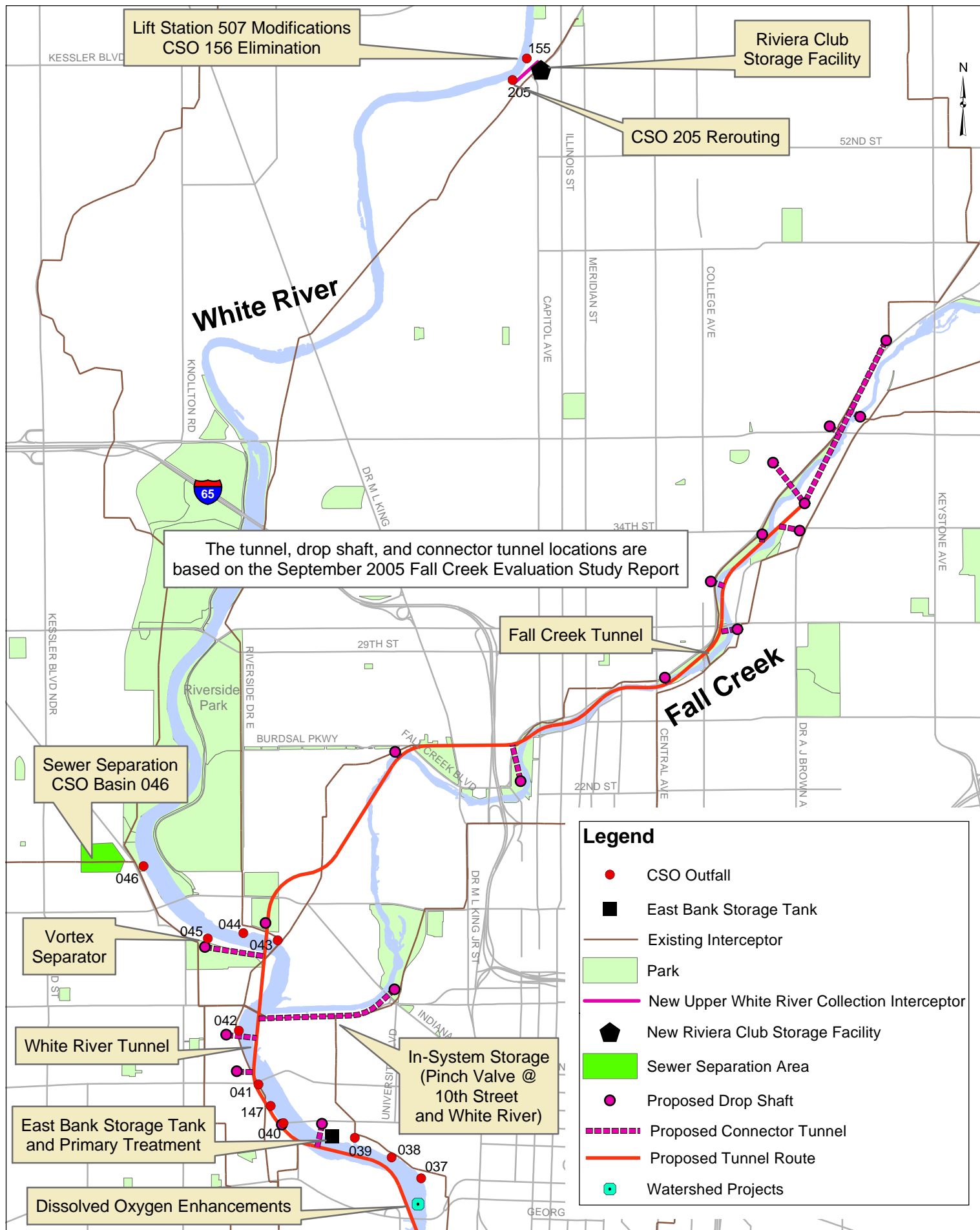
OVERFLOW VOLUME BEFORE AND AFTER PLAN IS IMPLEMENTED





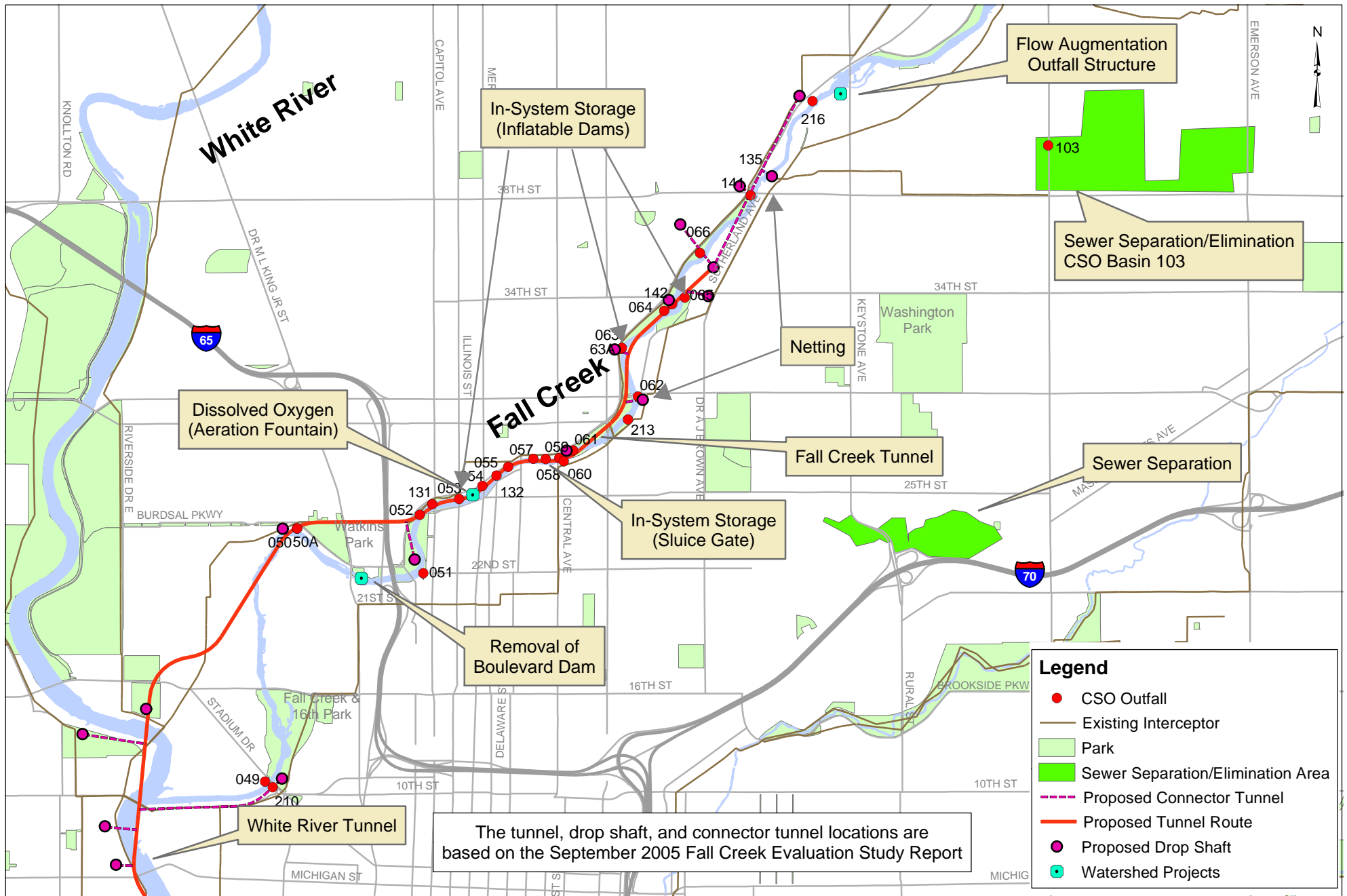
July 2006 Long Term Control Plan Lower White River Watershed Control Measures

These major projects represent planning-level information and may be subject to refinement during facility planning and design phases



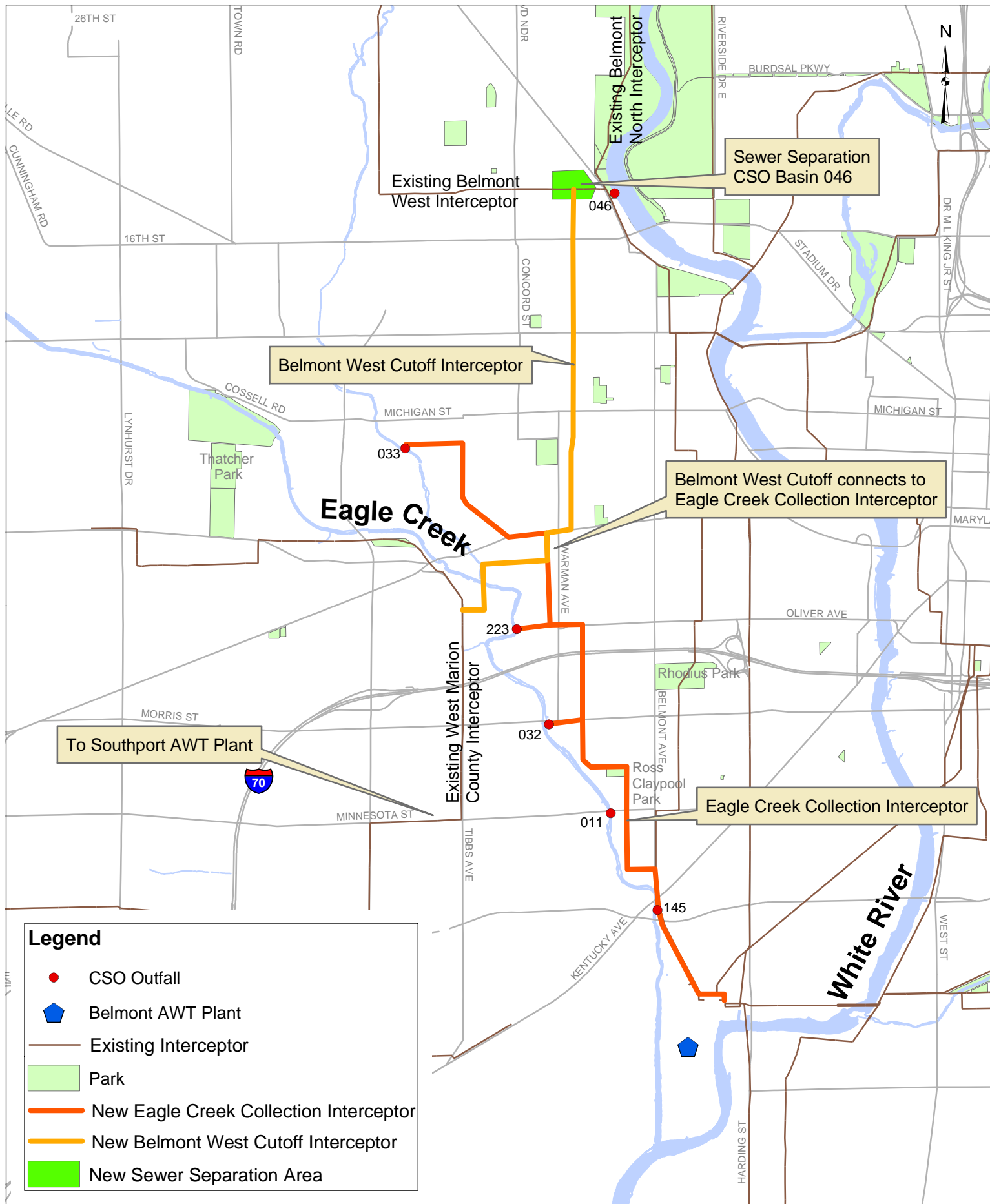
July 2006 Long Term Control Plan: Upper White River Watershed Control Measures

These major projects represent planning-level information and may be subject to refinement during facility planning and design phases



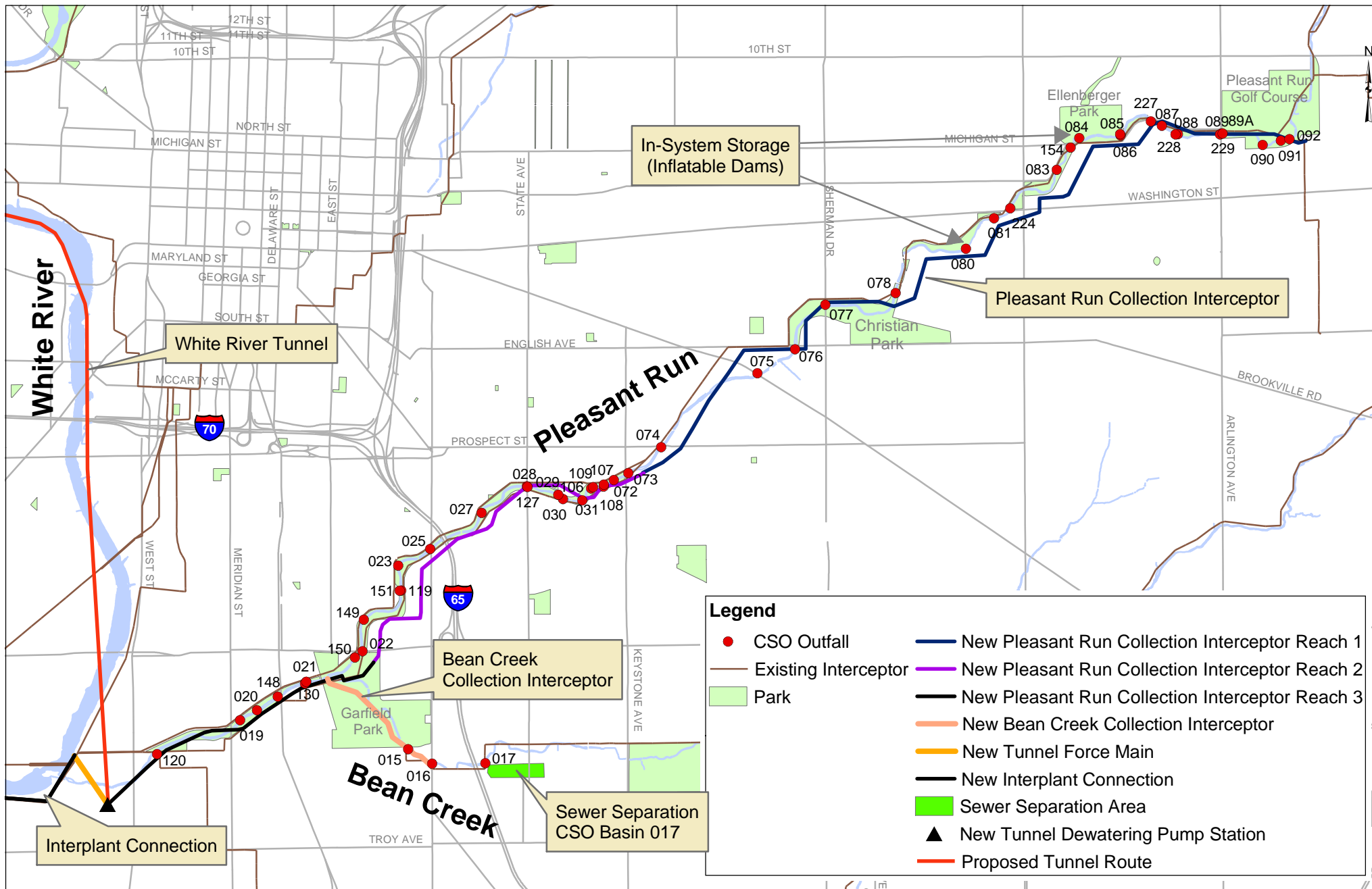
July 2006 Long Term Control Plan Fall Creek Watershed Control Measures

These major projects represent planning-level information and may be subject to refinement during facility planning and design phases



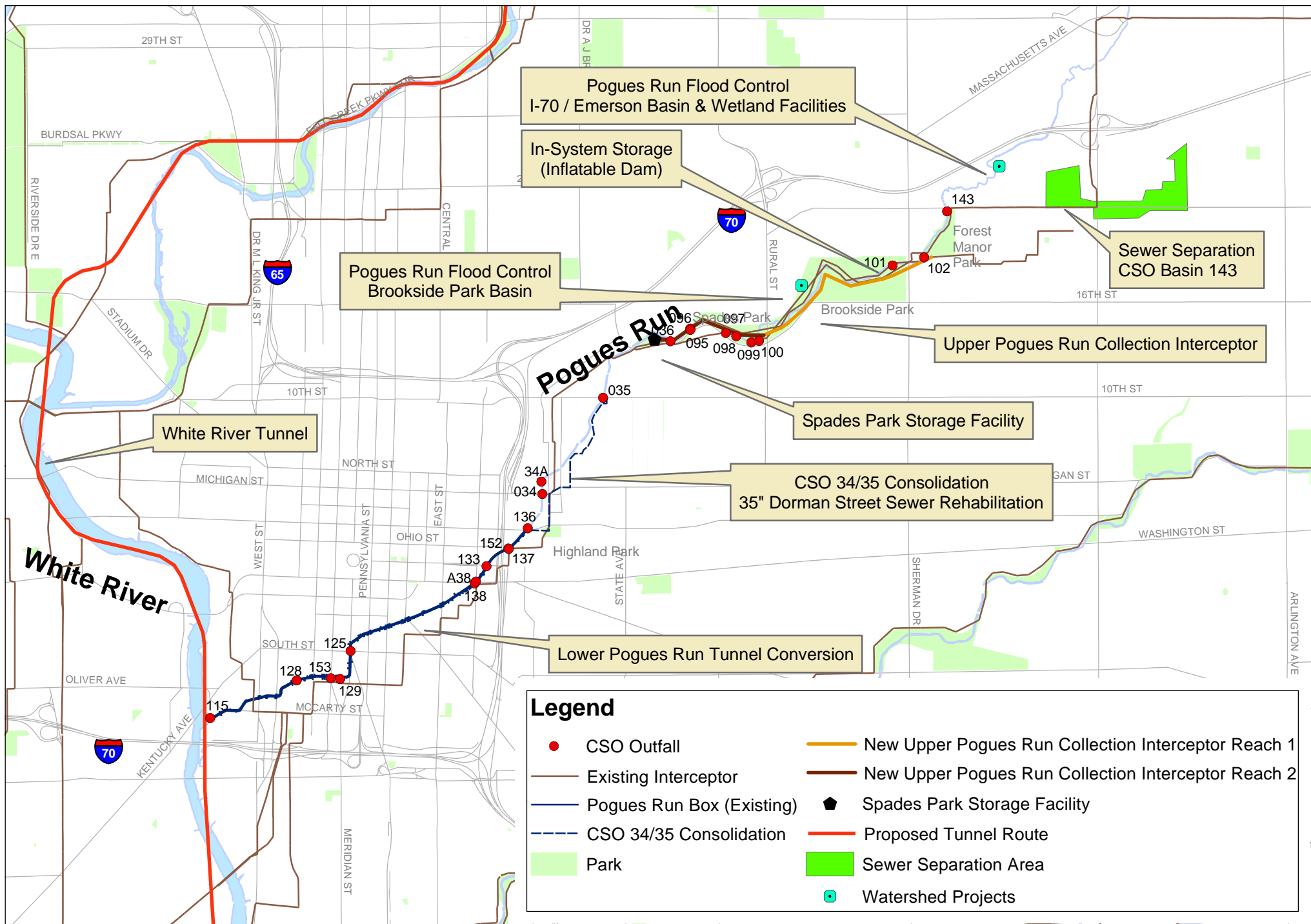
July 2006 Long Term Control Plan Eagle Creek Watershed Control Measures

These major projects represent planning-level information and may be subject to refinement during facility planning and design phases



July 2006 Long Term Control Plan Pleasant Run Watershed Control Measures

These major projects represent planning-level information and may be subject to refinement during facility planning and design phases



July 2006 Long Term Control Plan: Pogues Run Watershed Control Measures

These major projects represent planning-level information and may be subject to refinement during facility planning and design phases

City of Indianapolis
Department of Public Works

Raw Sewage Overflow Long Term Control Plan and Water Quality Improvement Report

is available for public review and comment. The document also is available electronically at www.indycleanstreams.org.

You are invited to submit comments on the plan via mail, fax or Web. Verbal comments also will be accepted at a public hearing on Aug. 3, 2006, 7 p.m., at the University of Indianapolis.

SUBMIT COMMENTS ONLINE:
www.indycleanstreams.org

MAIL COMMENTS TO:
City of Indianapolis Long Term Control Plan Comments
c/o Indianapolis Clean Stream Team
151 N. Delaware Street, Suite 900
Indianapolis, IN 46204

FAX COMMENTS TO:
(317) 327-8699

Thank you for your interest in the city's efforts to reduce sewer overflows, improve water quality and improve the quality of life in our neighborhoods.



INDIANAPOLIS
CLEAN STREAM TEAM

LTCP E-mail Blast

Subject: Special Announcement from the Indianapolis Clean Stream Team

Mayor Announces Release of Raw Sewage Overflow Long Term Control Plan; Public Review and Comment Period Begins Today

Today, Mayor Peterson announced the release of the City of Indianapolis Raw Sewage Overflow Long Term Control Plan and Water Quality Improvement Report for public review and comment. To view the entire document online or to request a CD of the plan, visit www.indycleanstreams.org.

The public is invited to submit comments on the plan via mail, fax or online. Verbal comments also will be accepted at a public hearing on Aug. 3, 2006, 7 p.m., University of Indianapolis, 1400 Hanna Ave., Good Hall, Room 105. The 30-day public review and comment period will end Aug. 18.

SUBMIT COMMENTS ONLINE:

www.indycleanstreams.org

MAIL COMMENTS TO:

City of Indianapolis Long Term Control Plan Comments
c/o Indianapolis Clean Stream Team
151 N. Delaware Street, Suite 900
Indianapolis, IN 46204

FAX COMMENTS TO:

(317) 327-8699

Thank you for your interest in the city's efforts to reduce sewer overflows, improve water quality and improve the quality of life in our neighborhoods.

Please see the news release below for additional information.

[paste news release]

**Raw Sewage Overflow Long-Term Control Plan Announcement
July 19, 2006**



TO:

Court & Commercial RECORD

YOUR PUBLIC
INFORMATION
SOURCE
SINCE 1895

Department of Public Works
(Governmental Unit)

Marion County, Indiana

IBJ CORP.
41 E. Washington St., Suite 200, Indianapolis, Indiana, (317) 636-0200

PUBLISHER'S CLAIM

LINE COUNT - Display Matter (Must not exceed two actual lines, either of which shall total more than four solid lines of type in which the body of the advertisement is set) - number of equivalent lines.

HEAD - number of lines

BODY - number of lines

TAIL - number of lines

TOTAL NUMBER OF LINES IN NOTICE

64

COMPUTATION OF CHARGES

64 lines. 1 columns wide, equals 64 equivalent lines at 0.431 cents per line

27.58

Additional charges for notices containing rule or tabular work (50 percent above amount)

Charge for extra proofs of publication (\$1.00 for each proof in excess of two)

0.00

TOTAL AMOUNT OF CLAIM

\$ 27.58

DATA FOR COMPUTING COST

Width of single column 10 ems

Size of type 6 point

Number of Insertions

1

Pursuant to the provisions of Ch. 15, Acts 1953

I hereby certify that the foregoing account is just and correct, that the amount claimed is legally due, after allowing all credits, and that no part of the same has been paid.

1 OF 1

06-8509

Notice of Public Hearing
Indianapolis Department
of Public Works.

Date July 21, 2006

Title: Clerk

PUBLISHER'S AFFIDAVIT

State of Indiana

Marion County ss:

Personally appeared before me, a Notary Public in and said county and state, The undersigned Judith A. Smith, who being duly sworn, says she is a Clerk for the IBJ Corp., publishers of Court & Commercial Record, a daily newspaper of general circulation, printed and published in the English language, in the City of Indianapolis, Indiana, in State and County aforesaid, and that the printed matter attached hereto is a true copy, which is duly published in the said paper for 1 time, the dates of the publication being as follows:

07/21/06

Subscribed and sworn to before me, this 21st day of July 2006

My Commission Expires: February 1, 2008

County of Residence: Johnson

Notice is hereby given that the Indianapolis Department of Public Works will hold a 30-day comment period on the proposed City of Indianapolis Raw Sewage Overflow Long Term Control Plan and Water Quality Improvement Report. A public hearing will be held on August 3, 2006, at 7:00 PM in Room 105 of Good Hall at the University of Indianapolis, 1400 East Hanna Avenue. The aforementioned plan will help restore Indianapolis neighborhoods that now suffer from the sight and smell of raw sewage nearly every time it rains. At an estimated cost of \$1.8 billion in 2005 dollars, the plan represents the largest investment in clean water infrastructure in the city's history. The plan solidifies the city's commitment to the federal and state governments to reduce sewer overflows and meet permit requirements under the Clean Water Act.

The Report is available online at www.indycleanstreams.org. Printed copies of the plan can also be found at all Indianapolis-Marion County Public Library branches, the Department of Public Works at 604 N. Sherman Drive, and the Indianapolis Clean Stream Team at 151 N. Delaware, Suite 900. You may also request an electronic copy on CD-Rom by calling the Indianapolis Clean Stream Team at 317-327-8720.

Public comments on the plan will be accepted until August 18. Written comments may be submitted online at www.indycleanstreams.org or to the Indianapolis Clean Stream Team, 151 N. Delaware St., Suite 900, Indianapolis, IN 46204.

If you have a disability and require an accommodation to attend please call 327-3798.

Please contact the Clean Stream Team at 327-8720 if you have any questions.

MARGIE SMITH-SIMMONS

Judith A. Smith

Gled A. Russell

Notary Public

DEPT OF PUBLIC WORKS
MARION COUNTY, INDIANA

To: INDIANAPOLIS NEWSPAPERS
307 N PENNSYLVANIA ST - PO BOX 145
INDIANAPOLIS, IN 46206-0145

PUBLISHER'S CLAIM

LINE COUNT

Display Matter - (Must not exceed two actual lines, neither of which shall total more than four solid lines of the type in which the body of the advertisement is set). Number of equivalent lines

\$

Head - Number of lines

\$

Body - Number of lines

\$

\$

Tail - Number of lines

\$

Total number of lines in notice

COMPUTATION OF CHARGES

65.0 lines 1.0 columns wide equals 65.0 equivalent lines at .374 cents per line

\$ 24.31

Additional charge for notices containing rule and figure work (50 per cent of above amount)

\$

Charges for extra proofs of publication (\$1.00 for each proof in excess of two)

.00

\$.00

TOTAL AMOUNT OF CLAIM

\$

DATA FOR COMPUTING COST

Width of single column 7.83 ems Size of type 5.7 point

\$

Number of insertions 1.0

\$ 24.31

Pursuant to the provisions and penalties of Chapter 155, Acts of 1953, I hereby certify that the foregoing account is just and correct, that the amount claimed is legally due, after allowing all just credits, and that no part of the same has been paid.

DATE: 07/21/2006

Karen Mullins

Clerk
Title

80459-4436590

PUBLISHER'S AFFIDAVIT

State of Indiana SS:
MARION County

Personally appeared before me, a notary public in and for said county and state, the undersigned Karen Mullins who, being duly sworn, says that SHE is clerk of the INDIANAPOLIS NEWSPAPERS a DAILY STAR newspaper of general circulation printed and published in the English language in the city of INDIANAPOLIS in state and county aforesaid, and that the printed matter attached hereto is a true copy, which was duly published in said paper for 1 time(s), between the dates of: 07/21/2006 and 07/21/2006

Karen Mullins

Clerk
Title

Subscribed and sworn to before me on 07/21/2006

Susan Ketchum

Notary Public

My commission expires:

"OFFICIAL SEAL"
Susan Ketchum
Notary Public, State of Indiana
My Commission Exp. 05/06/2011

RATE PER LINE

PUBLISHED 1 TIME = .339
PUBLISHED 2 TIMES = .509
PUBLISHED 3 TIMES = .679
PUBLISHED 4 TIMES = .848

Notice of Public Hearing
Indianapolis Department of Public Works
Notice is hereby given that the Indianapolis Department of Public Works will hold a 30-day comment period on the proposed City of Indianapolis Raw Sewage Overflow Long Term Control Plan and Water Quality Improvement Report. A public hearing will be held on August 3, 2006, at 7:00 PM in Room 105 of Good Hall at the University of Indianapolis, 1400 East Hanna Avenue. The aforementioned plan will help restore Indianapolis neighborhoods that now suffer from the sight and smell of raw sewage nearly every time it rains. At an estimated cost of \$1.8 billion in 2005 dollars, the plan represents the largest investment in clean water infrastructure in the city's history. The plan solidifies the city's commitment to the federal and state governments to reduce sewer overflows and meet permit requirements under the Clean Water Act. The Report is available online at www.indycleanstreams.org. Printed copies of the plan can also be found at all Indianapolis-Marion County Public Library branches, the Department of Public Works at 604 N. Sherman Drive, and the Indianapolis Clean Stream Team at 151 N. Delaware, Suite 900. You may also request an electronic copy on CD-Rom by calling the Indianapolis Clean Stream Team at 317-327-8720. Public comments on the plan will be accepted until August 18. Written comments may be submitted online at www.indycleanstreams.org or to the Indianapolis Clean Stream Team, 151 N. Delaware St., Suite 900, Indianapolis, IN 46204. If you have a disability and require an accommodation to attend please call 327-3798. Please contact the Clean Stream Team at 327-8720 if you have any questions.
MARGIE SMITH-SIMMONS
PUBLIC INFORMATION OFFICER
DEPARTMENT OF PUBLIC WORKS
(5-7/21-4436590)

TE PRESCRIBED FORMULA

PICA COLUMN - 94 POINT
POINTS / 5.7 PT. TYPE - 16.49
EMS / 250 - .06596 SQUARES
6 SQUARES x \$5.14 - .339 CENTS PER LINE